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ABSTRACT

The Center for Occupational Education helped to initiate and assisted in implementing a planning, programing, and budgeting (PPB) system for State agencies administering occupational education in North Carolina. The conference was a means of disseminating the results and those of similar efforts by the various State departments represented. The presentations were designed to provide a mix between the principles of planning and management and the practical problems encountered when implementing these principles. Presentations covered these topics: the Center's PPB project, laying the groundwork for PPB, educational planning, integrating PPB concepts with Office of Education requirements, program evaluation and review technique, local-State planning relationships, establishing a planning concept and budgeting cycle, and the integration of planning and evaluation. Handouts and figures accompanying the presentations are included. The appendixes contain the planned and actual conference program; lists of the planning committee, consultants, and participants; exhibits accompanying one of the presentations; and the evaluation questionnaire sent to conference participants and a summary of the results. (SC)

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NATIONAL CONFERENCE ON THE INITIATION OF A PLANNING, PROGRAMMING AND BUDGETING SYSTEM IN A STATE DIVISION OF OCCUPATIONAL EDUCATION

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CENTER SEMINAR AND CONFERENCE REPORT NO. 12

CENTER FOR OCCUPATIONAL EDUCATION
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
1970

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CENTER FOR OCCUPATIONAL EDUCATION

RESEARCH-DEVELOPMENT-TRAINING

The Center for Research, Development, and Training in Occupational Education was approved and established as a Research and Development Center in 1965, under the provisions of Section 4(c) of the Vocational Education Act of 1963. The initial approval was for 20 months, ending 31 January, 1967. The proposal for the continuation of the Center for five years, beginning 1 February, 1967, has been approved and the continuation program is in operation. The total program, which has emphasized research in crucial problems in occupational education since its inception, has been divided into five complementary programs, including a research program, an evaluation program, a research development program, a research training program (in occupational education), and a services and conferences program. The Center is designed and organized to serve the nation, with special orientation to the southern states.

The Center is part of the program conducted under the auspices of the Organization and Administration Studies Branch, Division of Comprehensive and Vocational Education Research, Bureau of Research, Office of Education, U. S. Department of Health, Education, and Welfare. The Center is located at North Carolina State University at Raleigh, and has been established as an integral unit within the University. The program of the Center cuts across the Schools of Agriculture and Life Sciences, Education, Liberal Arts, and Physical Sciences and Applied Mathematics. Cooperating and participating Departments include Adult Education, Agricultural Education, Economics, Experimental Statistics, Guidance and Personnel Services, Industrial and Technical Education, Politics, Psychology, and Sociology and Anthropology.

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Dr. Charles H. Rogers, Coordinator

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NATIONAL CONFERENCE ON THE INITIATION OF A PLANNING, PROGRAMMING, AND BUDGETING SYSTEM IN A STATE DIVISION OF OCCUPATIONAL EDUCATION

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Division of Occupational Education
North Carolina State University

* *

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Center Seminar and Conference Report No. 12

CENTER FOR OCCUPATIONAL EDUCATION
North Carolina State University at Raleigh

1970

Project No. BR-7-0348
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PREFACE

The Center for Occupational Education offered the North Carolina State Board of Education its resources to help initiate a planning, programming, and budgeting system in the state agencies responsible for administering occupational education. A Center staff member was assigned to develop a plan of initiation activities and to work with agency personnel in making changes necessary in the existing system. This conference was proposed as one method for disseminating the results of this effort to state-level occupational educators from other states. The 35 participants represented 16 states and the U. S. Office of Education.

A combination of formal presentations, large and small group discussions, handout materials, and short, informal presentations resulted in the participants' finding out not only about the Center's North Carolina project but also about similar efforts mounted by the various state departments represented. Two presentations by consultants enabled the participants to compare PPB efforts in the states against a conceptual framework for undergoing such activities, giving them ideas for improvement.

The Center wishes to thank Dr. Williams for serving as director of this conference and the consultants and participants who helped to make the conference possible. Thanks are also due Dr. Joseph R. Clary, Executive Director of the North Carolina Advisory Council on Vocational Education, for his pre-publication review of the manuscript. Appreciation is expressed to Mrs. Sue King for editing the oral presentations into written form, to Mrs. Olive Maynard for typing the manuscript, and to the entire Center clerical and technical staff for their efforts toward the production of this report.

John K. Coster
Director

TABLE OF CONTENTS

	Page
PREFACE	ii
INTRODUCTION	1
PRESENTATIONS	3
The Center's PPB Project, Robert T. Williams	4
Laying the Groundwork for PPB, Mercer Doty	8
Educational Planning, Joseph A. Perkins, Jr.	16
Integrating PPB Concepts with Office of Education Requirements, Cliff Belcher	37
Program Evaluation and Review Technique, Steven J. Gyuro	42
Local-State Planning Relationships, Sherrill T. Goodman	57
Establishing a Planning Concept and Budgeting Cycle, Harvey H. Fischer	60
The Integration of Planning and Evaluation, Robert T. Williams	79
APPENDICES	95
Appendix A. Planned and Actual Conference Program, Planning Committee, Consultants, and Participants	96
Appendix B. Exhibits Accompanying Goodman Presentation	102
Appendix C. Evaluation Questionnaire and Summary	119

INTRODUCTION

The purpose of this conference was to disseminate to occupational education planners the Center's experiences in working with one state to assist it in initiating a PPB system. The objectives of the conference were:

1. to allow participants to inspect how one state initiated PPB concepts into its system of occupational education;

2. to give participants opportunities to apply planning concepts to their home situation, through work sessions; and

3. to give participants the opportunity to compare the planning effort in their state with that being done in other states represented at the conference.

The presentations were designed to provide a mix between the principles of planning and management and the practical problems which agency personnel encounter when trying to implement those principles. Work sessions were scheduled to give participants time to relate information from the presentations to their plans for bringing change to their own agencies. It was believed that this could be done effectively away from the usual office routine, with assistance from the conference consultants. The work sessions did not materialize as scheduled for several reasons: (1) the presentations and discussions they stimulated overran their allotted time; (2) the participants indicated a preference for continuing the large group discussion; (3) many of the participants were not the only persons responsible for planning PPB implementation in their home state; and (4) the conference director decided that these factors should dictate a modification of the agenda.

The main portion of this conference report consists of the full text of the presentations made by six of the speakers and an outline of remarks made by one other. Appendix B contains material to supplement the presentation of Mr. Goodman.

Participants were also offered copies of four other documents which were related to the planning effort in North Carolina but which were not discussed in detail at the conference. These documents were:

1. A position paper written by the conference director on "A New Role for the Division of Occupational Education." This paper was written in August, 1969, when the proposed reorganization of the Division was under discussion. Its main theses are that local educational agencies must be delegated responsibility and resources for program planning and process evaluation, and that the reorganization of the Division could be accomplished effectively through the structuring of a PPB system.

2. A new "Annual Local Plan for Occupational Education (Public Secondary Schools)," published in February, 1970. The conference director assisted state staff in designing and revising this plan. It is a major revision of the previous format in that it uses Office of Education program codes, calls for program offerings to be based on pupil aspirations and manpower needs, and attempts to match proposed expenditures with programs. Copies are available from A. G. Bullard, Education Building, Raleigh, North Carolina 27603.

3. Handbook for Use in Planning Occupational Education Programs published in February, 1970, to accompany the revised plan. This was the first such handbook published in North Carolina. It contains an orientation to the planning requirements of the 1968 Vocational Amendments, instructions for completing each section of the new plan, and tables of state and local employment statistics by occupations (for 1960) and by 19 occupational groupings for 1970 and 1980).

4. Planning for the North Carolina Community College System, Volume I: Summary and Recommendations. This document is discussed in Harvey Fischer's presentation. It became available the week before the conference convened. The full report is available from the Department of Community Colleges, Education Building, Raleigh, North Carolina 27603. This plan developed training needs based on employment projections and educational achievement levels. It recommends enrollments and costs for the 1970's.

No record was kept of discussion comments or group meetings, but several of the participants who distributed materials being used in their home states made extended remarks, including:

1. Philip Bailey, who discussed the development and content of Michigan's new manual for local administrators and that state's resource allocation formula;

2. Charles Hopkins, who discussed the development and use of Oklahoma's revised local plan and his PPB responsibilities;

3. Robert Seckendorf, who discussed the format of the New York State Plan for Vocational Education that now includes priorities and performance level indicators and New York's resource allocation formula;

4. Walter Ulrich, who discussed Utah's one-page local application; and

5. Roy Ustby, who discussed the development of Wisconsin's management information system.

After the conference, an evaluation questionnaire was sent to each participant to determine the general attitude toward the objectives and procedures of the conference. That questionnaire and a brief summary of the findings are included as Appendix C.

PRESENTATIONS

THE CENTER'S PLANNING, PROGRAMMING, AND BUDGETING PROJECT

Robert T. Williams

Center for Occupational Education
North Carolina State University

First, I wish to thank Dr. Coster publicly for including the work "initiation" in the title of my project. Some of you know me well enough to know of my naivete and idealism. Two years ago I was predicting--but not too loudly--that by now North Carolina would be well along the road to full implementation of PPB in occupational education. For the past month, I've been asking myself if we've really done enough to justify this conference. Dr. Coster and I have been disappointed that more has not been accomplished. It is easy to sit in my office at the Center, read books and articles about PPB, and draw up an implementation schedule; but I forget that I am only one of many inputs to the agencies. The agency people tell us they are pleased with what has been accomplished--that without help from the Center they would not have gotten so far. You will have to look behind all the paper we have produced to see changes in attitudes and understandings which will facilitate the further implementation of PPB. I'll let each of you decide the extent of our effectiveness for yourself.

I hope that in this morning session we can establish the kind of rapport which will allow us to be open with each other. Every state has problems in occupational education. Each of us knows that we are not serving all those who could benefit from occupational education. Few of us can be satisfied with our completion rates, our follow-up studies, our cost/effectiveness record, and our federal-state-local relations. We face political, economic, sociological, attitudinal, and pedagogical problems. I would hope that in deciding to spend three days here you said to yourself, "Perhaps we have solved some problems others are facing now," as well as "Perhaps someone there will have a solution to this problem I have now." Please don't leave North Carolina out. We need help, too.

I wish to spend a few minutes sketching the historical background of this project. The 1957 North Carolina General Assembly appropriated money for the state's first industrial education center. The impetus came not from educators, but from industrialists. A non-educator was appointed state T & I supervisor and given authority to build a system of area vocational schools, serving both secondary and postsecondary students. By the summer of 1963, the system had grown to 20 institutions. The 1963 General Assembly created the Department of Community Colleges and pulled the industrial education centers out of secondary vocational education. The organization chart which is in your package of materials

shows that the Director of the Department of Community Colleges reports directly to the State Board of Education. This arrangement has prevailed since 1963. Secondary students who had enrolled in the industrial education centers were allowed to continue until graduation, but the centers have since evolved into postsecondary and adult technical institutes and community colleges. In the areas of curriculum articulation, allocation of resources to local units, student reporting, teacher training, and planning, the two agencies and their programs have operated largely independent of each other.

In June of 1967, Dr. Coster attended the first OE-sponsored PPB conference at the University of Maryland. In September of that year he added to the Center staff a man with seven years of experience in teaching and administering occupational education in North Carolina. This man was concerned with the rapid expansion of the community college system and the possibility of developing a resource-allocation formula by which the state agency could coordinate an orderly growth of the system with a proper mix and distribution of curricula. Dr. Coster's awareness of the potential which PPB offers to the management of occupational education led to my investigation of this project in the spring of 1968, and its establishment that August. In conducting the project we have tried to follow these five principles:

1. to use vocabulary consistent with federal reporting requirements and national PPB usage;

2. to be consistent with PPB plans under development in the state budget office;

3. to lead and teach agency personnel rather than to hand them a completed package to which they did not contribute;

4. to keep most project activities at the operations level rather than at the theory and model-making level; and

5. to avoid repeating studies done by other state agencies (e.g., population projections, occupational demand studies, etc.).

Dr. Coster has categorized this project as developmental, rather than one pursuing basic research. By this we mean the Center's responsibility is to assist one or more agencies in incorporating an already existing body of knowledge into its activities. More specifically, I reviewed the literature on PPB, selected material which seemed most useful and applicable, and tried to introduce it into the operations of the Division of Occupational Education in the Department of Public Instruction. It didn't work this way with the Department of Community Colleges because of their contract with the Research Triangle Institute.

North Carolina was selected as the pilot state because it was convenient, because I was familiar with its program and people, and because both agency directors and the State Board of Education were willing to participate.

One assumption I made in the fall of 1968 proved false. I assumed that as part of the commitment to this project, each of the agencies would designate one of its staff members as a full-time PPB man. This did not happen. Project liaison was a collateral duty for the two staff members designated to work with me. When I realized this I had to back up and regroup. This also meant that their regular duties usually took precedence over my inputs. One of the most valuable things I have learned--and it just solidified this past month--is that I cannot schedule change. I must be patient.

I call your attention to the package of materials you picked up last night, specifically the "Calendar of Significant Project Events." The calendar may not indicate to you that the past year has been a particularly rough one for the Division of Occupational Education. They experienced a new allocation formula, a new method of granting allotments, a new administration in general education in the state department, a new state director, a cessation of many of their traditional functions and relationships, and a major internal reorganization. One staff member said, "The apple basket was turned upside down." More accurately, he might have said, "The apple basket was turned upside down, the apples were skinned, they were smashed, and then they were told to make like an orange." This situation may well be the reason why more implementation of PPB could not be accomplished during this particular year.

The calendar also indicates that in February we produced a handbook for annual planning by LEA's and associated forms. Many of you have a copy. In February it seemed almost perfect; now we know it leaves much to be desired. When Leon Minear was here in April, he said, "Bob, if your handbook can get the local people to see their responsibility to make programs responsive to student aspirations and manpower needs the first year, you've done a good job." That is about all it accomplished. We are disappointed in many of the plans which were submitted. Columns were not added accurately, cross-checks were not used, instructions were not followed. It is now obvious that most of the LEA's did not have the time, resources, or experience to complete this first plan satisfactorily. The first local long-range plans will be submitted this fall, with annual plans for the next fiscal year scheduled for submission early next year. We are hopeful that the second annual plans will be much better than the first set. Your suggestions for improving these materials will be appreciated.

Neither the governor nor the legislature has mandated PPB for North Carolina, nor has either of these publicly commented on PPB. The state budget division has been aware of it for nearly three years and this spring took the first step to move the agencies into it. In July of the even-numbered years, when the legislature is not in session, each head of a major agency makes a presentation before the Advisory Budget Commission, outlining his agency's hopes and dreams. This year, instructions from the budget division contained a PPB flavor, emphasizing long-range plans, goals, and target groups, rather than the previous emphases on agency maintenance and line-item categories. The July 3 presentations by the State Department of Public Instruction and the Department of Community

Colleges were well-received and showed evidence of completely understanding the shift in emphasis. Prior to this, the agencies were encouraged to use their own initiative if they desired to move in the PPB direction. Neither the State Board of Education nor the Department of Public Instruction has taken a position in support of PPB, leaving the Division of Occupational Education and the Department of Community Colleges with no commitment from "above." As project director, this left me with persons interested in making a start, but who were given few resources to devote to it and no push from within the agency.

The conference presentations and materials will tell you what we have done, what we have not done, and what we ought to have done, with emphasis on the latter. We have purposely omitted topics on techniques of projecting manpower requirements, conducting benefit/cost studies, and displaying alternate programs and their associated costs. Most of you have been exposed to these topics at prior conferences and have materials explaining them in your office library. We have chosen, instead, to concentrate on first things: obtaining the necessary political and administrative support, deciding the directions in which the total system should move, establishing a management information system, and scheduling PPB implementation activities. Work sessions have been scheduled to provide opportunities for each participant to develop or refine planning materials for use when returning home. Some of you may have brought such materials with you with the intention of reworking them during the work sessions. Others may be starting from scratch. Rather than providing a canned problem to keep you busy, we have decided to let you choose your own weapons. You may work individually or in groups.

If you haven't already browsed through the package of materials we provided last night, I recommend you do so before this afternoon's work session begins. Many of the pages are miscellaneous items I wrote when particular questions arose, such as the sheet titled "Criteria for a Minimum Comprehensive Program." I heard the terms "comprehensive high school" and "comprehensive program of occupational education" used but not defined, so I took a crack at it. Another sheet refers to policy questions which arose as we attempted to plan--questions which had not been answered. You are free to ignore, copy, or modify these things.

Finally, we have invited the state staff at both the secondary and postsecondary levels to sit in on the presentations. A roster of their names, office locations, and telephone numbers has been included in your package of materials, should you wish to conduct business with them while here. We solicit your active reactions to the project and its conference activities, whether they be supportive or adversely critical. We are all still learning.

LAYING THE GROUNDWORK FOR PLANNING, PROGRAMMING, AND BUDGETING

Mercer Doty

Budget Division
North Carolina Department of Administration

It might be helpful to begin this presentation by saying something about where we are in North Carolina with respect to planning, programming, and budgeting. Several agencies of the state have initiated work that has taken them well along the planning, programming, and budgeting trail. We are here today to talk about one of these efforts--in occupational education. There are a number of others. However, the central budgeting and planning offices of the state are not committed to planning, programming, and budgeting, nor do we have such a commitment from the governor or from the director of the Department of Administration. The state still uses a line-item budget prepared for two-year periods and approved by a legislature that comes to town for six months or so every other year. The relative power position of the governor with respect to the legislature is quite weak. He has no veto of any kind, and he cannot succeed himself. With a strong legislature or general assembly, which is usually absent, and a weak governor who is usually present, you might wonder how the state operates. Most of the money decisions required in the absence of the general assembly are made by a group of six men called the Advisory Budget Commission. The Advisory Budget Commission is essentially a standing committee of the general assembly because four of its six members are the chairmen of the house and senate money committees. The other two members are appointed by the governor. Therefore, the discretionary money decisions that must be made in the absence of the general assembly are made by the Advisory Budget Commission. At the risk of being facetious, it may be pointed out that the Advisory Budget Commission is not committed to planning, programming, and budgeting either.

With this brief background on the status of planning, programming, and budgeting in North Carolina, we might consider changing the title of this session from "Laying the Groundwork for Planning, Programming and Budgeting" to "Scratching the Surface for Planning, Programming, and Budgeting." Such a change would be appropriate if we were to consider only those measures of progress applicable to state government in general. However, we are fortunate that we have some individual agency efforts that are quite advanced--and that is why we are here. Even though we cannot compare in general commitment to Wisconsin or Pennsylvania and others, we can say with some pride that we are trying everything in our attempts to "move the mountain."

So much for general background on North Carolina. Now let's consider for a moment the nature of planning, programming, and budgeting.

It reminds me of "the cycle of poverty" in some respects. That expression has become popular among sociologists because it recognizes the self-perpetuating nature of poverty. In talking about it they draw a circle to represent it and emphasize that this circle, or cycle, must be broken at several places at once if we are to have any real effect on poverty. The same applies to planning, programming, and budgeting. The top man cannot proclaim it and have it blossom overnight. The planner cannot do it alone; the budget man can't either; nor can the information specialist or the systems analyst or the cost analyst. Planning, programming, and budgeting requires the understanding and support of several of these functions if it is to get off the ground. This is why virtually all of the planning, programming, and budgeting literature emphasizes the need for support from the top--because this is one way of ensuring support from other staff functions below the top.

Where is "the top"? Ideally, it is that point at which control is exercised over all the key actors in the planning, programming, and budgeting drama. In practice it is often difficult to get a commitment from this man, and in this connection we should remember that the higher we go up the ladder of responsibility, the greater become the constraints. So we must sometimes settle for strong support somewhere below the ideal "top man." This will make the job tougher but not necessarily impossible. It will increase the need for diplomacy, selling, and education. We should take care to teach and to sell those groups to whom the top man is responsive. If we can change their attitudes we can reduce the constraints on them and make it possible for them to change their attitudes without undue risk. In the business of teaching and selling we can also draw support from the efforts of other agencies. If you have a red-hot planning, programming, and budgeting project underway in another agency, keep in touch. It is a good source of help in the techniques of planning, programming, and budgeting and their success can increase your own leverage. We have a rather sophisticated information system under development in the Department of Mental Health. They are doing a good job and we shout it from the roof tops. We also keep a steady stream of state employees knocking on their door. The same applies to the planning underway in the Department of Community Colleges. You will hear more about this on Wednesday. Don't think for a minute that we're the only ones who know about this conference on planning, programming, and budgeting in occupational education. A lot of people in Raleigh know about it, many of whom won't touch planning, programming, and budgeting with a ten-foot pole - yet!

Now, let's talk a bit about planning. There are several strategies that can be used to get the job done. One of these might be called the "broad participation strategy." In this approach large numbers of agency people are involved in the identification of goals and objectives. It requires a large staff and a lot of man hours at many levels in the agency. It also requires a massive teaching job so the many people involved are launched in productive directions. This strategy has the advantage of producing plans that have built-in acceptance. It is difficult to execute, and it requires a staff with considerable sensitivity and skill.

The second strategy can be done by a small staff in a comparatively short time. This strategy is easier to control and execute, but it requires more selling when the job is done.

How do you know which strategy is best for you? In answering this question, look at the resources controlled by the highest administrator in your agency who has made a positive commitment to planning, programming, and budgeting. If he has plenty of resources, you might consider the first strategy. If he can only make available one man and a secretary, you might be better off with the second route. Consider also the time available. Maybe the use of a consultant can augment your staff enough to get the job done. Above all, look at the kind of organization you're working with and the professional biases of your field. In your situation you may want to develop a modified strategy that is somewhere in between the two we have discussed. Even with a small staff effort it may be possible, and to great advantage later, to keep people informed of what is going on. This, of course, applies especially to activities that will be effected as planning develops, such as budgeting and data collection. How you handle your contacts with these related activities depends to some extent on the nature of the commitment from your top administrator and on his level in the organization "pecking order." The stronger his position on either score, the less diplomacy will be required. It is probable that the top administrator does not exercise control over the budget process so it is essential that the planner recognize early what he can expect (or cannot expect) in the way of budgetary reform. Another activity that is often overlooked is the accounting system. If yours has not recently been overhauled, it is probably inadequate for program accounting. You may be able to stimulate change in the accounting system, but it is more likely that you will have to adjust to it the way it is. This may require you to insert an extra step in your budget to translate your programs to other cost categories that the accounting system can handle.

It is obvious that the identification of goals and objectives must have high priority. However, the phasing of some of the other techniques of planning, programming, and budgeting may not be quite as obvious. No one can give you an exact sequence because so much depends on the degree of development of these techniques in your states and on the degree to which they are accepted by policy-makers. On the other hand, keep in mind that the beginnings of planning, programming, and budgeting, even in the enormous Department of Defense, were small. Handout #1 lists the prerequisites that made it possible to install planning, programming, and budgeting in the Department of Defense. This is a reminder to us all that our expectations have grown over the years. Handout #2 lists some of the techniques of planning, programming, and budgeting with comments on each that may be helpful in identifying and scheduling the tasks ahead.

There are a few comments that might be made about the constraints under which you must operate. The first are the most obvious--political constraints. The way the political winds blow will vary greatly from state to state, but they are always there. You must be sensitive to

them simply because you cannot expect to sell an idea to a political official if he expects to lose votes as a result of it. Remember, it's his perception of public attitudes that counts, not yours. Very few politicians take calculated risks. More often, they overestimate the opposition of the smallest interest groups and overreact to it. This is bad news, but we have to live with it. This does not mean that we should avoid elected officials and their appointees, but that we should select our targets with great care. Put a lot of effort in identifying the real key people. Don't sell when there is no need, but sell as though your life depends on it when an official is on your target list.

In the selling game you will run up against men who oppose your ideas for a variety of reasons. Some will block you as a result of their ignorance or misunderstanding. Their attitudes can usually be changed if they develop confidence in you and if you patiently correct their misunderstandings. Some officials will oppose you merely because they fear change of any kind. These are generally tough customers because they may agree with you publicly and fight you in private. If you know the man well, you may be able to change him. If not, look around for someone else who can change his attitudes, like his boss. Of course, there are some individuals who see that planning, programming, and budgeting will threaten their positions. As a group they are not stupid, and this is to your advantage. They may be bright enough to learn how they can achieve rewards and satisfaction within a planning, programming, and budgeting system. It will be worth a try to teach them. The toughest job of all may be to identify which of the opposition is basing his stand on which of the reasons we have discussed. He tells you he thinks planning, programming, and budgeting is unsound because it concentrates too much power in the hands of a few analysts. Is this what he really thinks, or did he read it in Ann Landers' column?

By now you must be wondering just what the role of the planner is. He has many roles. He must be a leader who shows the way. He must be a prodder and a pusher. He must be a teacher in the morning and a salesman in the afternoon, and, like those "who also serve," he must often "stand and wait." Remember that PPB can also be an acronym for Patience, Prodding, and Blackmail. To do all of these things you might think you have to be a combination of Milton Friedman, O. J. Simpson, and Bob Hope. It would help, but there are some specific talents that we lesser men can use. We need competence most of all--to adapt planning, programming, and budgeting to our own environments and to understand why some very thoughtful men have reservations about its effect on some of our institutions. We must know how to deal effectively with people from the governor to the janitor--how to organize them and how to relate their specific talents to the tasks at hand. We need to know how to plan in the field of occupational education and how to plan the implementation of planning, programming, and budgeting.

HANDOUT #1

PREREQUISITES FOR THE INITIATION OF PPB IN THE DEPARTMENT OF DEFENSE*

1. A small group of talented people who had spent years developing insights into the special problems of defense strategy and logistics.

2. A common terminology, an ad hoc collection of analytical approaches, and the beginning of theoretical statements to guide policy analysts.

3. Top leadership that understands policy analysis and is determined to get it and make use of it.

4. The existence of planning and planners.

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*Taken from Public Administration Review, March/April, 1969, p. 191.

HANDOUT #2

ACTIVITIES RELATED TO PPB

1. Determining Goals and Objectives

   Comments: This is essential to both the mechanics and the understanding of PPB. As a prerequisite it requires a mission statement that gives the major priorities and broad goals of occupational education. It is useful to attempt to express objectives in terms of some service provided (or skill taught) to some segment of the population. In developing objectives there will often be a need to revise or amplify the mission statement.

   Phasing: Usually the initial step. Priority I

2. Program Definition

   Comments: Once objectives are established, the activities that contribute to their achievement can be identified. These become the elements of a program to reach an objective. Program definition is a two-phase process. One part of it deals with what is going on now that contributes to your objectives. The second part of it deals with what ought to be done to achieve the objectives more quickly, effectively, or economically. This is where alternatives are born and why they must be evaluated.

   Phasing: Begins as soon as you are reasonably satisfied with objectives. Continuous process with respect to future years. Priority I

3. Resolution of Policy Questions

   Comments: Policy questions will surface during the development of goals and objectives. They must be clearly identified and referred as they arise to the appropriate level for decision. Don't sit on them or assume policies. The issue paper is one device for resolving policy questions.

   Phasing: This is a continuing activity

4. Building Data for Decisions

   Comments: Data needed for decisions will be identified early on the development of goals and objectives. Quantification of objectives is desirable as a basis for analysis of alternatives to achieve them. Major effort is required to identify and gather required data. Without it, sound alternatives may be eliminated on the basis of inadequate data. Need to consider "program independent" data.

Phasing: Start early. Whenever a goal or objective is identified there must be an immediate determination of data required to measure progress toward it. Priority II

5. Effectiveness Analysis

Comments: Cost/benefit and cost/effectiveness analysis are usually lumped together because they involve similar skills. However, we should realize that cost analysis does not generally require broad background in occupational education. Effectiveness analysis does require such background. You need professionally qualified people to do it well, so you may have to graft the additional analytical skills onto people you already have.

Phasing: Start the development of these skills at the beginning of the project. They will then be able to contribute to the data collection effort early in the game. Priority II

6. Cost Analysis

Comments: The skills involved in analysis of alternatives are among the most difficult to get in government. Individuals with competence in cost analysis can be obtained through training of employees with analytical and mathematical skills or through recruitment of new employees. Either route takes time.

Phasing: Get these skills early. They can have an important impact on your data collection effort while they are waiting to begin formal cost studies. Priority II

7. Identification and Evaluation of Alternatives

Comments: Once objectives are established, it will be possible to identify alternative strategies for achieving them. The evaluation of these alternatives will be based on data and analysis. In some instances the level of analytical sophistication need not be high to assure sound results. It is essential, however, that alternative strategies be supported by good cost and effectiveness data.

Phasing: Although alternatives can begin to take shape quite early, their final definition and analysis must follow establishment of program objectives. Priority III

8. Initial Program Budget

Comments: This is the first attempt to tie together defined programs, objectives, costs, and effectiveness. It will often be imperfect as a result of budget constraints over which you may have no control, or as a result of the difficulty of meshing all of the activities necessary to produce it. Don't let this discourage you. Half a loaf is better than none. It is also an important step in learning where improvement is needed because it is the pay-off.

Phasing: Although PPB is cyclic, the production of the program budget is usually thought of as a final step. Execution of this budget will reveal its deficiencies, particularly when projected program results are compared to actual results. These in turn become the bases for revision of objectives, development of new alternatives, evaluation of alternatives, and further decisions. Priority IV

EDUCATIONAL PLANNING

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Increasing pressures are being felt by state departments of education and individual school districts to develop and operate more effective programs. The public and the youth of today are constantly challenging educational administrators and planners to search for more effective and efficient ways to use available resources.

Recognizing that our educational system has contributed to this country's growth and success by such examples as putting men on the moon, the almost miraculous successes in the field of medicine, and significant contributions in the areas of fine art, music, and literature, what has generated this pressure for more effective programs and the concern for a better "bang for the buck"? No one thing can be said to have caused this pressure. The long-drawn-out Asian conflict, a change in values of today's concerned citizens, the frustration of young people who see the same mistakes and problems continuing, and the frustrations of minority groups with their situation are all factors.

At a recent visit to a "hippie" commune in northern California, the major criticism leveled at the public education establishment was that it suppresses communication. Phrases stood out such as "Daddy is home but let's keep quiet because he had a hard day at the office," "No noise in the corridors" and "We must have quiet in the classroom."

Concurrently, hundreds of school budgets and bond issues are being turned down by concerned citizens who are demanding better justification of educational costs. Further, they are questioning the effectiveness of our public programs as they look at the recent college and university unrest, "hippie" movements, and the general youth dissatisfaction with the established educational system. Specifically, planning and communication seem to have emerged as shortcomings in our public elementary and secondary educational system throughout the country.

Against this background, local, state, and federal school administrators are becoming more cognizant of the need for a more responsive and timely system that will effectively communicate the intent of educational programs (the output) as well as their costs. You are here at this conference as state vocational education planners and program directors. You have an additional problem because of the image which vocational education has in the eyes of a vast majority of parents and students. This image--that vocational education is for those not bright enough to go on to college, for the malcontents in school systems, or for those who can't afford higher education--is another dimension which planning and communication needs to attempt to solve.

A planning and program management system that will allow for better decision-making and alternative program selections, and which will better assist you in planning, forecasting, and leading the way in your states is needed. PPBS (planning, programming, budgeting system) coupled with a greatly improved public relations (communications) approach appears capable of meeting these needs.

What is PPBS?

PPBS is a synthesis of established techniques that are applied to the management and control processes to produce a program budget that relates the output-oriented activities of an organization to the input-oriented resources. The advantage of PPBS is that the outputs of programs of a local or state educational agency rather than the inputs or resources necessary to support them are emphasized. Its value in education results not alone from the individual techniques that have been developed, but also from their integration into a system conducive to sound educational decision-making.

With this system, educational administrators have better information for planning educational programs and for making choices among the alternative ways in which funds can be allocated to achieve the state's established objectives, the programs to reach these objectives, the methods of evaluating the programs, and the costs of operating them. The analysis and evaluation central to the implementation of a planning, programming, and budgeting system require identification of the public school end-products. The analytic and evaluative processes require that alternative ways be considered for meeting defined objectives through utilization of various combinations of personnel, facilities and materials to bring about the desired educational results. The important question routinely asked in the course of PPBS operation is, "How much additionally would be gained or lost, by way of achieving the defined objective, through spending more or less for the purpose?"

History of PPBS

PPBS has its origin in the application of systems engineering techniques utilized by Dupont Company planners. About 1916 Dupont gained control of General Motors Corporation and wished to establish planning and cost controls on the output of the various divisions of General Motors. Figure 1 shows the specific progress of the adoption of PPBS concepts up to the California project in governmental circles.

Evolution of Budgeting

Budgeting, which is a part of the planning and management cycle, has gone through an evolutionary process. Figure 2 shows the three major steps of the budgeting evolution: object budgeting which deals primarily

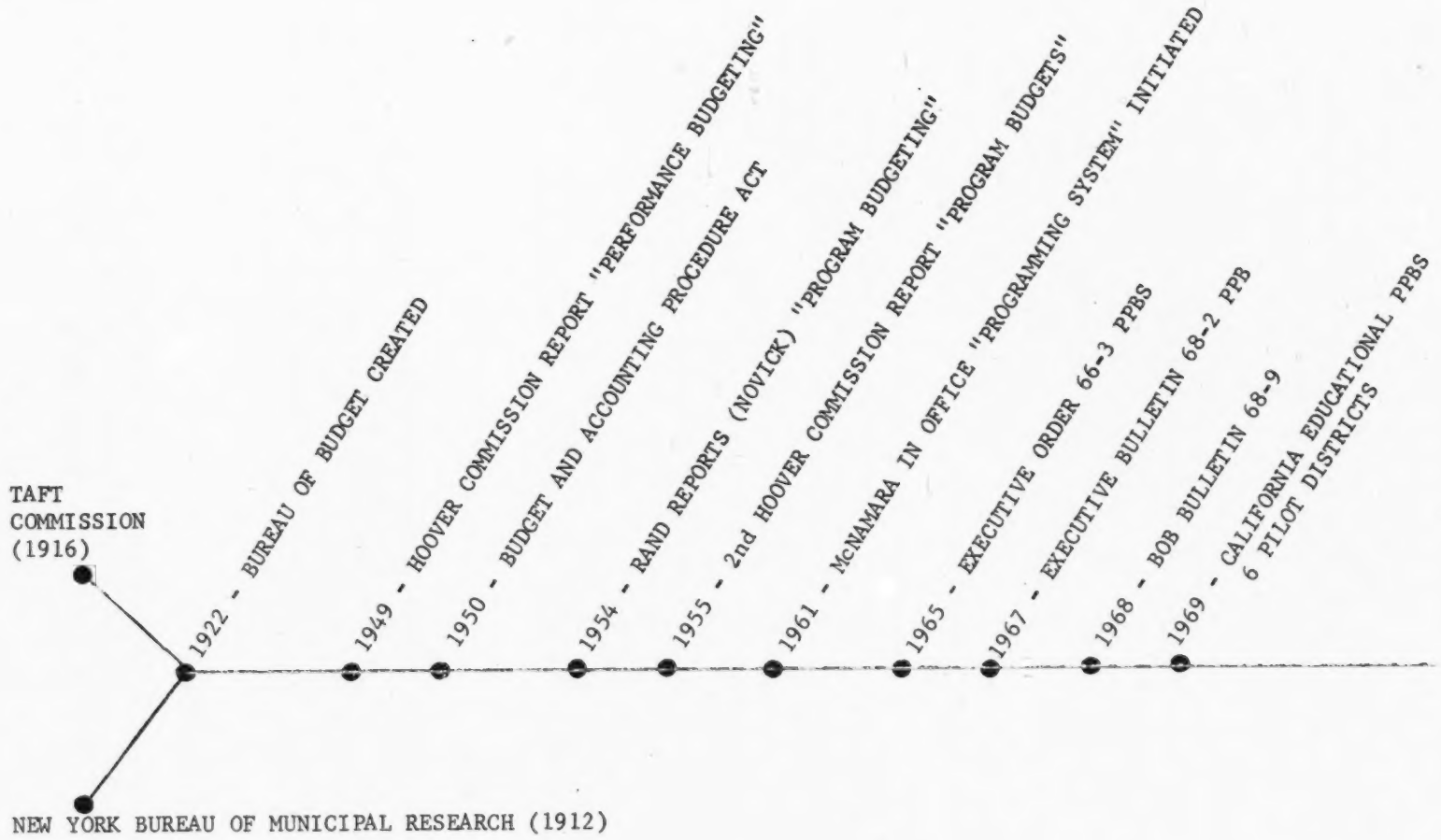

TAFT
COMMISSION
(1916)
NEW YORK BUREAU OF MUNICIPAL RESEARCH (1912)
1922 - BUREAU OF BUDGET CREATED
1949 - HOOVER COMMISSION REPORT "PERFORMANCE BUDGETING"
1950 - BUDGET AND ACCOUNTING PROCEDURE ACT
1954 - RAND REPORTS (NOVICK) "PROGRAM BUDGETING"
1955 - 2nd HOOVER COMMISSION REPORT "PROGRAM BUDGETS"
1961 - McNAMARA IN OFFICE "PROGRAMMING SYSTEM" INITIATED
1965 - EXECUTIVE ORDER 66-3 PPBS
1967 - EXECUTIVE BULLETIN 68-2 PPB
1968 - BOB BULLETIN 68-9
1969 - CALIFORNIA EDUCATIONAL PPBS
6 PILOT DISTRICTS

Figure 1. The Road to PPBS

- OBJECT BUDGETING
  - CONTROL OF WORK
  - CASTS BUDGET CATEGORIES IN TERMS OF ORGANIZATIONAL UNIT, CHARACTER OF EXPENSE
  - PROVIDES EFFECTIVE CONTROL OVER ADMINISTRATION

- PERFORMANCE BUDGETING
  - PROCESS OF WORK
  - CASTS BUDGET CATEGORIES IN FUNCTIONAL TERMS
  - PROVIDES WORK-COST MEASUREMENTS TO FACILITATE EFFICIENT PERFORMANCE OF ACTIVITIES

- PLANNING PROGRAMMING BUDGETING
  - PURPOSE OF WORK
  - CASTS BUDGET CATEGORIES IN TERMS OF OBJECTIVE OR PURPOSE OF GOVERNMENT
  - PROVIDES ANALYSIS OF ALTERNATIVES AND PERFORMANCE CRITERIA TO MEASURE ATTAINMENT OF OBJECTIVES

Figure 2. Evolution of Budgeting

with the input into a system--salaries, supplies and materials, equipment, etc.--and is a controlling device; performance budgeting which deals with the process and can be compared to cost-accounting; planning, programming, and budgeting which deals with the output or purpose and provides for analysis of alternatives and performance criteria to measure attainment of objectives.

PPBS Concepts and Misconceptions

There are a number of concepts utilized in PPB systems, but three are particularly important:

1. PPBS is a management tool designed to assist in rational decision-making.

2. PPBS provides an ordered way of examining problems of choice.

3. PPBS provides a means of presenting teachers and administrators a defined course of program activity, time-phased over several years, with built-in provisions for continuing assessment of program progress.

There are some misconceptions about PPBS which continue to prevail and have frequently contributed to unsuccessful implementation in agencies. They are:

1. PPBS is not a substitute for the experience of the decision-maker.

2. PPBS is not decision-making by computer.

3. PPBS is not limited to budgeting and cost accounting.

Unfortunately, some administrators and many state and local school board members envisage PPBS as a kind of "instant management Metrecal" which will provide them with instant answers. Others are frightened by PPBS as a step toward relinquishing all decision-making to a computer. Neither is true! As previously stated, a PPB system is a management system which will assist the decision-maker, not supplant his experience. Similarly, one needs a computer only because there is a large volume of data to process, and the computer can only array this data in various formats in order that the administrator may then analyze the results and make his decision.

Finally, it is important to stress that PPBS really requires a change in management thinking and behavior. It is necessary to manage the inputs into a system, but in addition, we must constantly be planning for results, assessing the effectiveness of program results, and determining new or different ways to achieve desired goals. Budgeting and cost accounting are only two of a number of supporting techniques to PPBS rather than the endpoints.

The Elements of PPBS

The elements of PPBS are perhaps best understood when presented in terms of the PPBS cycle. The schematic diagram of the cycle (Figure 3) reflects the following features which will be discussed in fuller detail: goals, objectives, programs, budgets, operation, evaluation, analysis, and the supporting management information system.

These elements are essential to any PPB system regardless of the level of operation, local, state, or federal.

Goals and Objectives

In order to introduce the reader to goals and objectives, Figure 4 shows examples of non-educational and educational goals and objectives in a simplified form.

In order to determine the goals of an agency or a division of an agency, such as occupational education, the needs of the state must first be identified. These are the needs of the children, adults, business, industry, other governmental units, and all of the other societal elements of the state. These needs must then be translated into goals or general statements of purpose or intent. Goals are not related to a specific period of time, and they are not quantifiable or measurable in any way other than by a broad subjective review. Examples of goals are shown in Figure 5. These goals should then be arranged in hierarchical order and structure as shown in Figures 6 and 7.

Objectives, which are desired quantifiable accomplishments within a time framework, must next be developed. The relationship between goals and objectives is shown in Figure 8. Each objective must:

1. relate to one or more goals,
2. be measurable,
3. state the method of measurement,
4. indicate the evaluation criteria, and
5. state the time period for achievement.

Some examples of objectives appear in Figure 9, and arrangements of objectives in hierarchical order and structure are shown in Figures 10 and 11.

Objectives, then, represent measurable achievements, the attainment of which advances the educational system in the direction of established goals. Integral to meaningful objectives are the evaluative criteria by which the effectiveness of programs in attaining objectives will be measured. It will be observed that each of the objectives shown as examples contains within it one or more stated or implied evaluative criteria.

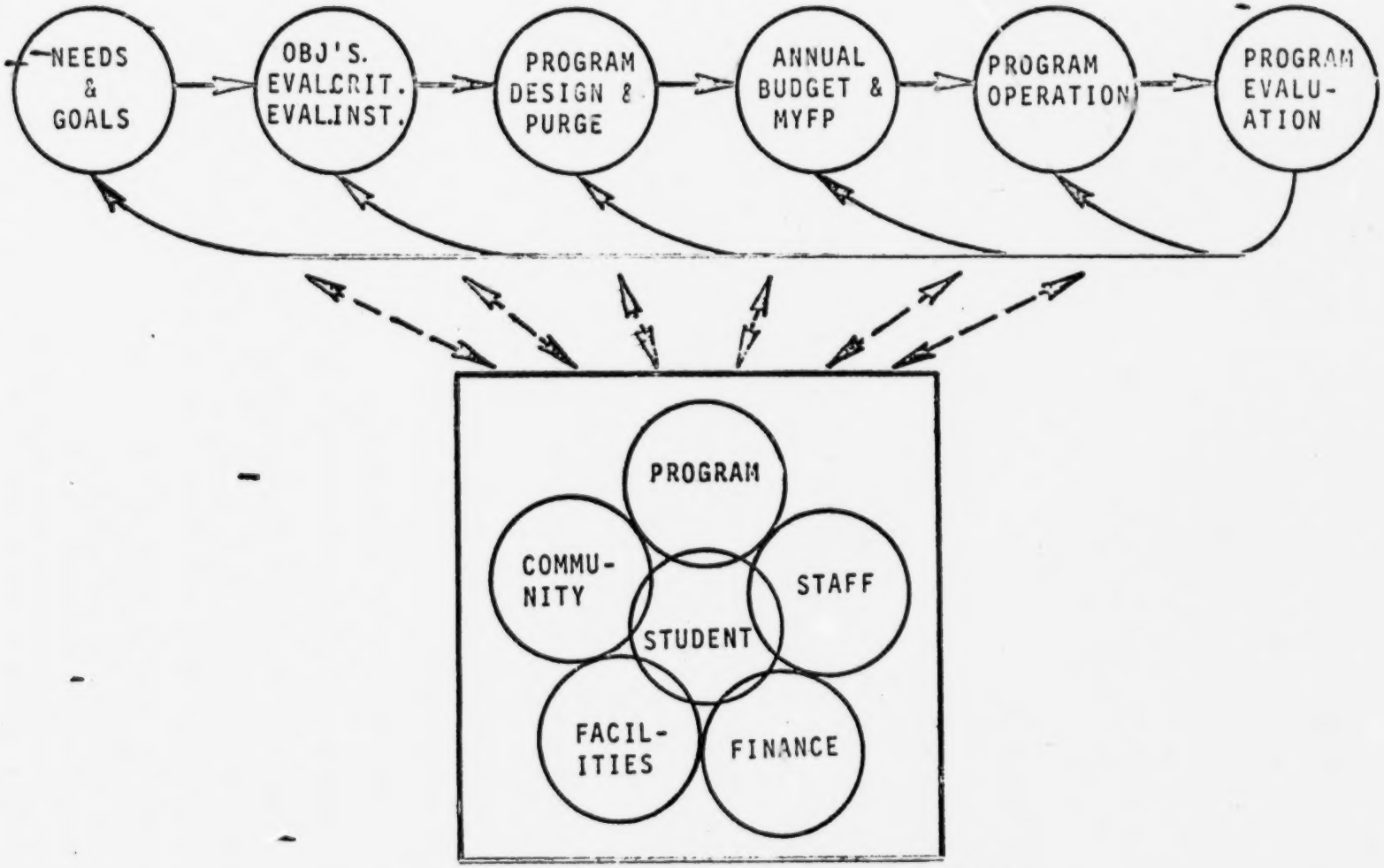


Figure 3. Planning, Programming, Budgeting System

NON-EDUCATIONAL EXAMPLE	EDUCATIONAL EXAMPLE
● GOAL: IMPROVE MY GOLF GAME ● OBJECTIVE: IMPROVE MY GOLF GAME BY BREAKING 85 BEFORE EASTER ON COURSE X ● OUTPUT INDICATOR: GOLF SCORE ● SUCCESS CRITERIA: SCORE UNDER 85 BEFORE EASTER (ON COURSE X)	● GOAL: IMPROVE READING ● OBJECTIVES: IMPROVE STUDENTS' SCORES ON STANDARDIZED READING ACHIEVEMENT TEST BY 2 PERCENTILES WITHIN ONE SEMESTER ● OUTPUT INDICATOR: STANDARDIZED READING ACHIEVEMENT TEST ● SUCCESS CRITERIA: MEAN TEST SCORES FOR STUDENTS MUST EXCEED PREVIOUS SCORES BY 2 PERCENTILES AT THE END OF ONE SEMESTER

Figure 4. Goals and Objectives

TO DEVELOP INDIVIDUALS WHO, IN TERMS OF THEIR POTENTIAL . . .

- CAN APPRECIATE AND UNDERSTAND THE MANY FORMS IN WHICH COMMUNICATION OCCURS (VERBAL, NONVERBAL) AND WHO CAN COMMUNICATE (READ, WRITE, LISTEN, SPEAK, VIEW, ACT) EFFECTIVELY AND WITH UNDERSTANDING

- HAVE FUNDAMENTAL SKILLS AND UNDERSTANDINGS ENABLING THEM TO MEET AND SOLVE PROBLEMS QUALITATIVELY AS WELL AS QUANTITATIVELY

- APPRECIATE THE VALUE OF THE SCIENCES AND UNDERSTAND THE PURPOSES AND METHODS OF SCIENCES (OBSERVATION, EXPERIMENTATION, RECORDING ANALYSIS, PREDICTION)

- CAN MAKE REALISTIC APPRAISAL OF THEIR INTERESTS, APTITUDES AND ACHIEVEMENTS

Figure 5. Examples of Goals

G_1 A management information system responsive to the needs of the school system, the State Department, federal government, and other county agencies.

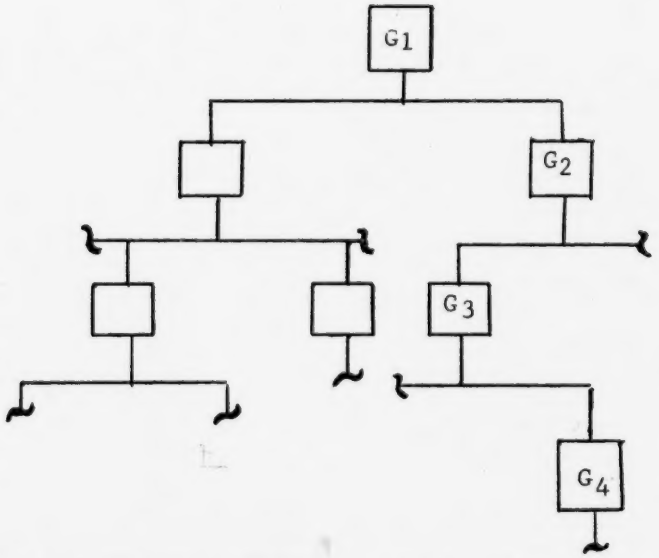
G_2 A financial system that supports the overall management information system.

G_3 To provide program cost data for all county school system programs and activities.

G_4 To provide program and cost data for Vocational Education programs.

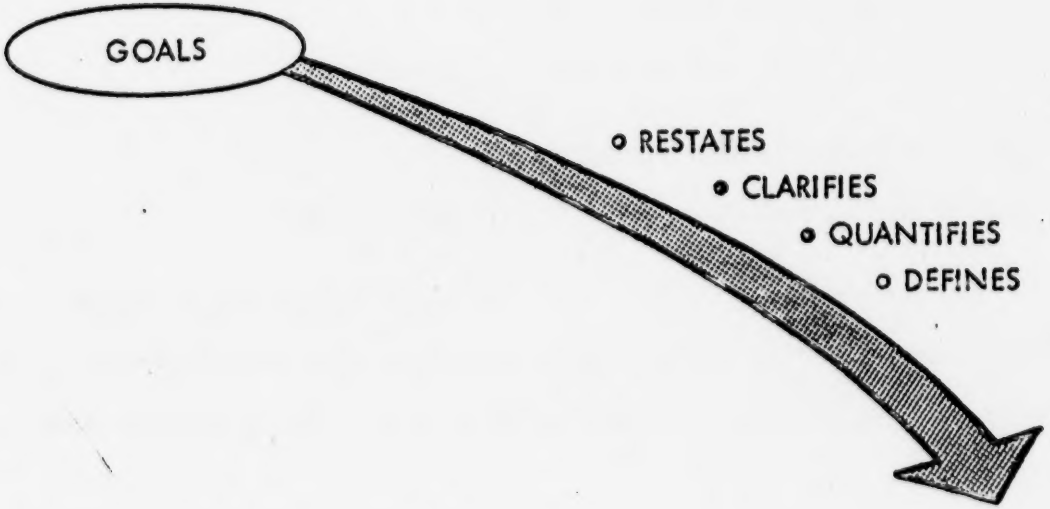
G_5 To provide program and cost data for Distributive Education programs.

Figure 6. Goal Structure (Example)



- G_1 - TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP SKILLS ENABLING THEM TO GAIN EMPLOYMENT
  - G_2 - TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP SKILLS IN BUSINESS, HOME ECONOMICS, AND AGRICULTURE
    - G_3 - TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP SKILLS IN TYPING, SHORTHAND, BOOKKEEPING, AND OFFICE MACHINE OPERATION
      - G_4 - TO PROVIDE ALL STUDENTS THE OPPORTUNITY TO DEVELOP SKILLS IN BOOKKEEPING

Figure 7. Typical Goal Structure



OBJECTIVES

AN OBJECTIVE IS A QUANTIFIABLE DESIRED OUTPUT WITHIN A TIME AND SPACE FRAMEWORK. BY ACHIEVING THE OBJECTIVE, PROGRESS TOWARD THE GOAL IS ADVANCED.

Figure 8. Elements of PPBS

- BY THE END OF THE 8TH GRADE, THE STUDENT WILL READ AND PRONOUNCE WITH 90% ACCURACY 10 LISTS OF 8TH-GRADE WORDS SELECTED FROM A BASAL READING TEXT

- BY THE END OF THE 8TH GRADE THE STUDENT IS ABLE TO COMPLETE A WRITTEN RESEARCH COMPOSITION WITH 90% TECHNICAL ACCURACY USING CRITERIA SPECIFIED WITHIN AN 8TH-GRADE ENGLISH TEXT

- BY THE END OF THE 8TH GRADE THE STUDENT WILL USE THE TOOLS OF GEOMETRY AND MEASUREMENTS IN PROBLEM-SOLVING AND GEOMETRICAL CONSTRUCTIONS (e.g., COMPASS, STRAIGHT EDGE, PROTRACTOR, RULER, CLOCK, MONEY, MAPS)

  MEASUREMENT: 1. MODEL CONSTRUCTION BY THE STUDENT
  2. TEACHER-CONDUCTED PAPER AND PENCIL TESTS

  CRITERIA: ALL STUDENTS WILL HAVE 100% CAPABILITY OF USING TOOLS AS DETERMINED BY THE TEACHER

Figure 9. Examples of Objectives

G_1O_1 By July 1, 1972, have all systems of the Educational Management Information System operating in order to provide the information needs of PPBS.

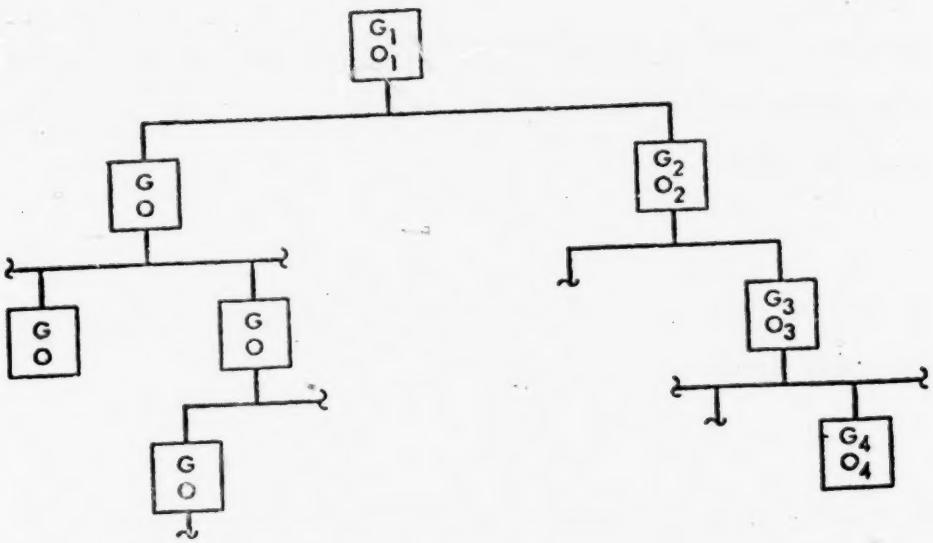
G_2O_1 By July 1, 1971, have all subsystems of the Financial System designed, tested and operating.

G_3O_1 By July 1, 1970, have operating the program cost accounting subsystem of the Financial System for all county school programs and activities by object and responsibility unit.

G_4O_1 By July 1, 1970, be able to provide monthly reports for Vocational Education displaying subprograms' operating costs by object and responsibility unit.

G_5O_1 By July 1, 1970, be able to provide monthly reports for Distributive Education displaying program operating costs by object and responsibility unit.

Figure 10. Objective Structure (Example)



O_1 FOR NINETY PERCENT OF THE GRADUATING SENIORS THAT WISH TO ENTER THE LABOR FORCE TO GAIN EMPLOYMENT WITHIN THREE MONTHS OF GRADUATION AS MEASURED BY A DISTRICT SURVEY

O_2 FOR NINETY PERCENT OF GRADUATING SENIORS THAT WISH TO ENTER THE LABOR FORCE TO GAIN EMPLOYMENT AS DESIRED IN BUSINESS, OR AGRICULTURE WITHIN THREE MONTHS OF GRADUATION AS MEASURED BY A DISTRICT SURVEY

O_3 FOR NINETY PERCENT OF THE BUSINESS CURRICULUM STUDENTS TO MEET THE FOLLOWING STANDARDS:

- TYPING - 40 WORDS PER MINUTE AS MEASURED BY THE IBM TEST WITH 90 PERCENT ACCURACY
- SHORTHAND - 60 WORDS PER MINUTE AS MEASURED BY THE GREGG TEST WITH A 2000 WORD VOCABULARY
- BOOKKEEPING - DEMONSTRATE UNDERSTANDING OF JOURNALS, INCOME STATEMENTS, AND BALANCE SHEETS AS DETERMINED BY CLASSROOM TESTS
- OFFICE MACHINE OPERATION - MEAN SCORE EQUAL TO NATIONAL AVERAGE ON NCR TESTS

O_4 UPON COURSE COMPLETION NINETY PERCENT OF STUDENTS WILL BE ABLE TO ACCOMPLISH THE FOLLOWING BASED ON CLASSROOM TESTS:

- STATE AND UNDERSTAND THE BASIC ACCOUNTING EQUATION OF DOUBLE ENTRY BOOKKEEPING
- UNDERSTAND THE FUNCTION OF AND MAKE JOURNAL ENTRIES
- UNDERSTAND THREE DEPRECIATION CALCULATION METHODS

Figure 11. Typical Objectives Structure

Measuring program effectiveness will probably be the most difficult problem encountered in the development of a PPBS at the state agency level. Your measures of effectiveness will have to deal with what program leadership, quality control, and other state functions can be effectuated with local school districts. It is recognized that there are areas of the educational process which are not, and perhaps some which cannot be, evaluated quantitatively. However, most of these unique or special areas can be subjectively evaluated, and documented subjective evaluation should be required. PPBS holds the promise of compelling educators, psychologists, and administrators to effect a breakthrough in the measurement log jam.

Two examples, important at the state agency planning level, of the relationship of educational goals and programs are shown in Figures 12 and 13.

Programs and Program Structure

When the goals, objectives and criteria have been defined, the next step is to develop programs that will attain the objectives. A program is a group of interrelated activities directed toward accomplishing objectives. The programs are arranged in a program structure, a hierarchical arrangement of programs that demonstrates their relationship to goals and objectives.

The majority of programs currently defined in most school districts are in the basic educational disciplines. The often extensive documentation of these programs is in the form of curriculum guides and course outlines. In most instances, this documentation with relatively little modification will provide the program description required for the PPBS.

There are usually no formal program structures covering the total activities of school districts. Minor rearrangement of the existing curriculum guides and class outlines will usually provide the basis for program structures within the basic educational disciplines. For example, under business education there are often program subcategories for typing, bookkeeping, shorthand, and office machine operation. For areas other than basic education, programs must be defined and organized into such a program structure.

The elements of a program structure are regularly identified as the following:

1. It provides a framework for program planning.

2. It will group educational activities to show how they relate to the achievement of objectives.

3. It will allow tracing of goals and objectives through all levels for program evaluation.

4. It provides a framework for budgeting and cost accounting.

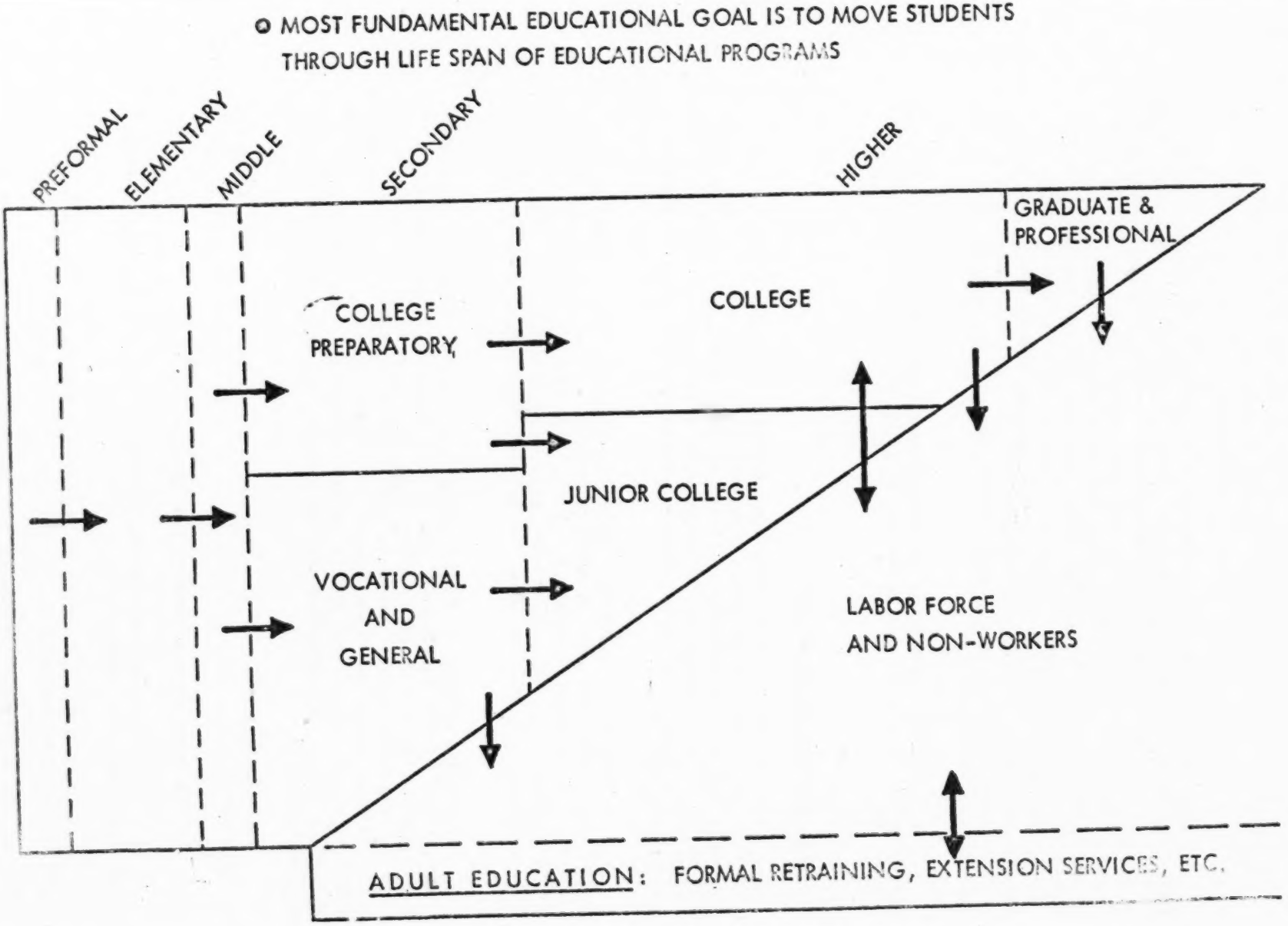


Figure 12. Life Span of Educational Programs

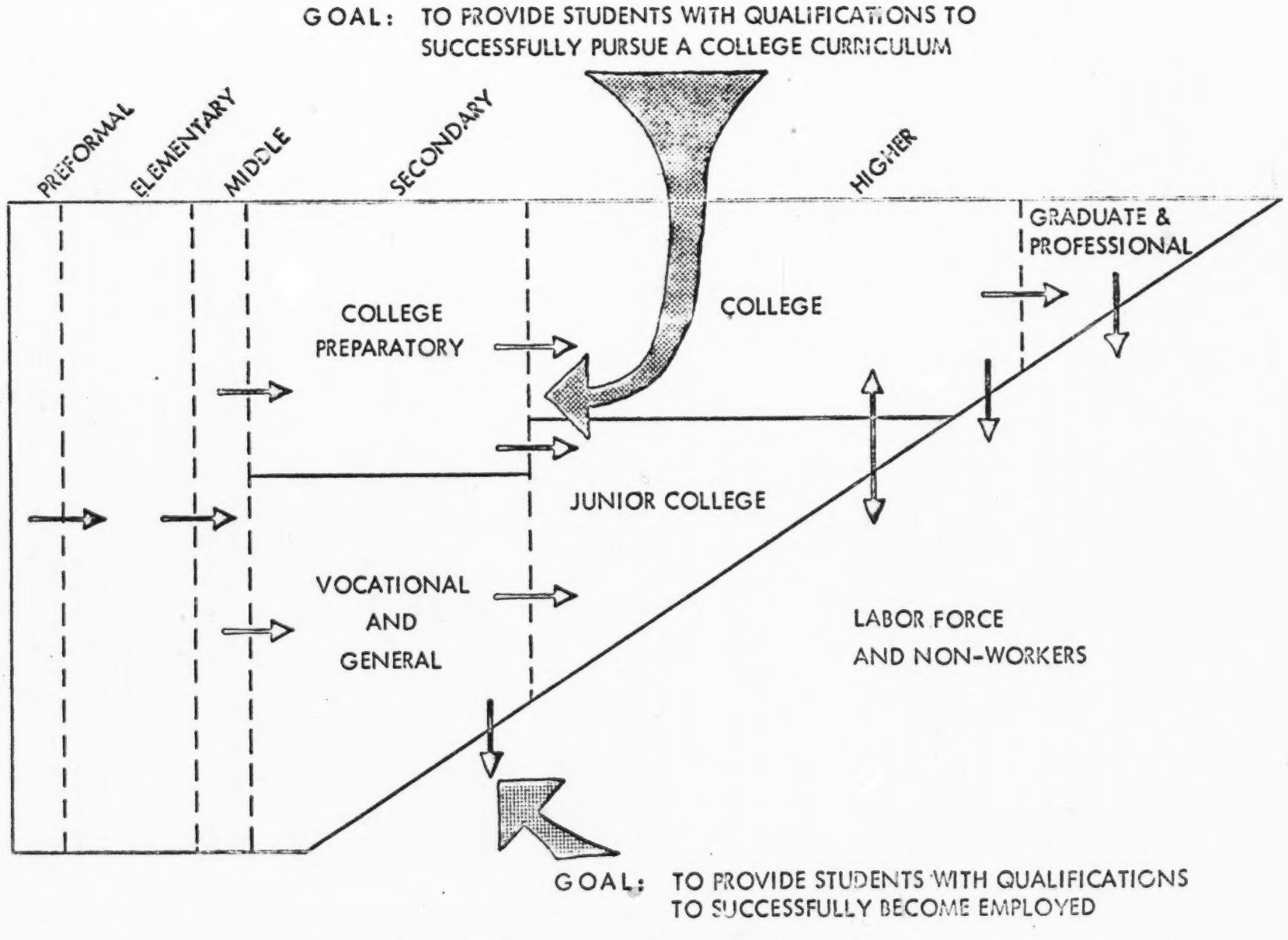


Figure 13. Educational Goals for Secondary Level

A sample program structure for a local school district is shown in Figure 14. Several state departments of education have developed well defined program structures for their operations. Because of the unique leadership role state departments of education have with local educational agencies, care must be taken to provide continuity between local and state agency program structures. This role is distinct and different from other state agencies which actually operate programs or manage activities such as highways or recreational programs.

For PPBS purposes, the programs and the analyses supporting them are documented in program memoranda. A program memorandum covers one major program area or portion of a major program area and presents alternatives considered, specific findings, recommendations, and cost estimates extending over the anticipated life of the program. At this point alternative programs are examined and selected in the light of constraints imposed by resource limitations.

Budgeting

Dollar figures are incorporated into two documents--the multi-year financial plan and the program budget itself.

The multi-year financial plan presents financial data for existing and alternative programs projected over several, usually five, years. This is a departure from the current practice of developing budgets for only the following year. The program budget itself, which pertains to the forthcoming year (or other budget period) only, is a statement of policy that relates costs to goals, objectives, and programs, based upon a program structure classification.

Operation

The next activity in the PPBS cycle is the actual operation of the programs and the management of the resources to implement them. These resources are, of course, the people, places, and things--the staff, buildings, supplies, and equipment.

Evaluation

The final step in the cycle is to evaluate the effectiveness of the program operations against the criteria established for the various program objectives. The process then recycles, using the evaluation information to determine whether objectives were attained or were not attainable because of either program or resource limitations.

A PPBS system is a continually active process. The effort to initiate a system requires that all current programs and activities be subjected to this systematic, analytical process. As ineffective programs and activities are purged from the system, their replacements are subjected to the same analysis.

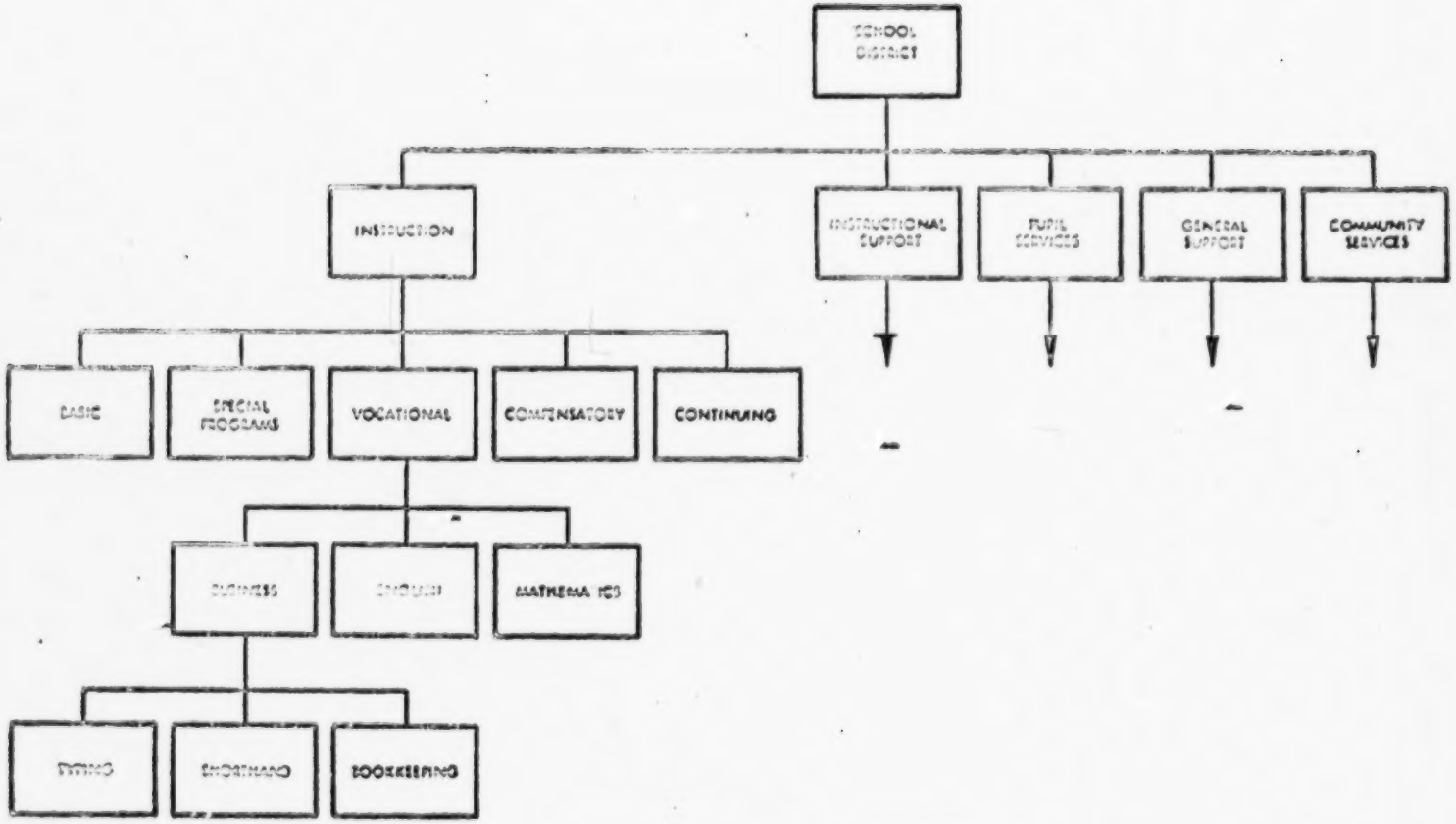


Figure 14. Tentative Program Structure

Conclusions and Benefits

Efforts to date in implementing PPB systems in state departments of education have been fragmentary and incomplete. One problem which continues to cause concern deals with the desire to discard the typical function/object line item budget in favor of the program budget. The legal fund accounting by function and object must be continued as one product of the financial management system. A program budget is an additional dimension to the budgeting and cycle which provides information on outputs not available from the line item budget.

Through the use of a PPB system, a state agency can be better prepared to demonstrate to the public, the executive branch, the legislature, and local education agencies the effectiveness of programs and the prudent use of resources available. PPBS provides a new approach to an old problem--that of better utilizing our limited resources to improve the learning process.

INTEGRATING PLANNING, PROGRAMMING, AND BUDGETING CONCEPTS WITH OFFICE OF EDUCATION REQUIREMENTS

Cliff Belcher

Division of Occupational Education
North Carolina State Department of Public Instruction

In preparing this subject, I have tried to establish five major headings under which to cover information. They are:

1. what the present reporting requirements for occupational education are;

2. what seems to be on the horizon for the U. S. Office of Education reports;

3. what North Carolina has not done toward integrating planning, programming, and budgeting concepts with Office of Education reporting requirements;

4. what North Carolina is considering in response to Office of Education alternatives; and

5. what ought to be done.

Basically, when we begin to discuss this topic, we are talking about the implementation of a part of a total management information system; however, in order to approach the subject at hand, let me start by talking about the present reporting requirements of the Office of Education.

We need to discuss a little history at this point. Traditional reports prior to the 1968 Amendments were:

1. the financial, which indicated the expenditures by program and purpose;

2. the statistical, which was reported by program area;

3. the follow-up, which is really the key in PPBS and which covered the old program areas; and

4. the descriptive report.

The relationship of these reports to the State Plan has been relatively insignificant in the past. The post-1968 reports, however,

have shown considerable promise beyond what existed at one time. A group specially established by the U. S. Office of Education began work in January, 1969, to develop forms which would relate to or tie into the State Plan for Vocational Education and would also have some meaning for the planning, programming, and budgeting system. Forms were developed which closely followed the PPB concepts; therefore, making it possible for the reporting system to become the fourth phase of the State Plan for Vocational Education. It would be a simple matter to tie back to Parts II and III of the State Plan. These forms were completed and recommended to the U. S. Office of Education. They were accepted at that level; however, when the forms were recommended to the Bureau of the Budget, modifications were made by that agency to the extent the reporting requirements for fiscal year 1970 are going to be practically useless if the state should restrict itself to the modified format. In essence, what has happened is that we have returned to the old traditional requirements. This brings us basically to the question, what are the U. S. Office of Education's needs? I believe Pete Perkins touched on this in his presentation to you earlier, and I do not propose to debate this particular topic at this point.

Instead, I think we need to move to the second major topic, what seems to be on the horizon for U. S. Office of Education reporting. Based upon my limited knowledge, it seems that there are three major influences "leaning" on the Division of Vocational and Technical Education reporting desires. They are:

1. The Bureau of the Budget - All report forms must be approved through this agency. There is a strong tendency to restrict the Division in meeting the requirements which Vocational and Technical Education feels that they need.

2. The Center for Education Statistics - Based on recent information received from this agency, it seems that they want a directory of vocational education. This, in essence, gets down to the nitty-gritty of knowing exactly what is being done as far as programs are concerned in each high school by each high school, by each teacher in each state.

3. The third group which seems to be coming into relative prominence at this particular time is the "Belmont Group." This group proposes to make vocational education a part of its master plan and to implement vocational education into this plan in 1972. Based on the proposal presently being constructed, a core of financial and statistical data will be secured by the Division of Vocational and Technical Education. The remainder of the information necessary for vocational education will be done on a sampling basis through the documents commonly known as the CPIR being proposed by this particular group.

Which of these alternative directions will win out? Based on previous history, there is a good possibility that the reporting requirements will develop into a multi-system with duplications continuing; therefore, the state can no longer use the U. S. Office of Education reporting requirements as a basis for designing, reporting, and management

information data banks at the state level. Instead, we must look at state and local needs and glean from this the reports requested by the U. S. Office of Education.

One of the tremendous difficulties in integrating program, planning, and budgeting concepts with Office of Education reporting requirements is the fact that reporting requirements are shared with states on an annual basis, and generally these reports come so late in the fiscal year that if the state does not have a true management information system, it is impossible to secure the data required by the U. S. Office of Education.

This leads us into what North Carolina has done Since North Carolina is unique in that there are two systems of vocational education, one existing at the Department of Community College level for postsecondary purposes and the other at the secondary level for elementary and high school purposes, it will be necessary for me to address myself to them separately.

The Secondary System

This system is undergoing a complete change in its reporting system. This has occurred primarily because of administrative changes in the Department of Public Instruction. In the past, the secondary reporting system has been established based upon U. S. Office of Education requirements. The basis for reporting was established at the local level with reports flowing from the local teacher to the program areas at the state level and to the Division of Vocational Education, Assistant Director's office, for compiling with community college reporting figures and subsequent submission to the U. S. Office of Education. The secondary level has been using a non-machine process, requiring everything to be done manually. Two years ago, the State Board of Education indicated that the existing system was placing too great a burden on teachers and directed the Division of Vocational Education to study reporting requirements and reduce them to the absolute minimum. Action was taken. Reports which at one time had been collected monthly were reduced to three times per year. Other changes occurred in the reporting system, also. On October 1, 1969, reorganization of the Division of Vocational Education basically did away with the program sections and assigned the function of collection of data to the Assistant Director's office. This completely eliminated channels for reporting in midyear. Therefore, it was necessary for us to scramble this year, and actually we fell flat on our face since the established channels for years were disrupted. The uncertainty over the kinds of information which would be required by the U. S. Office of Education also quadrupled the pressure and confusions, not only at the state level but also at the local level.

The new reporting system being designed proposes to implement a format whereby individual forms will be collected at the local level by students. Then the teacher at the local level will complete an optical scan form summarizing the data collected at that level by category and

forward this to the state office to be processed. This system will probably provide tables of every possible type of information the U. S. Office might require. It also will provide extensive information to the Division of Occupational Education for the purpose of planning and programming occupational education programs at the elementary and secondary level in this state. It is presently proposed that this system will be implemented in the public school program during the coming school year.

The Postsecondary Level

The reporting system for several years has been done completely by machine. The postsecondary program has been through several stages now. First, they went through the summary stage from local educational agencies, and they found the reporting data to be extremely inaccurate. Also, this produced a heavy requirement on the instructional personnel. The system presently being used in the Department of Community Colleges requires each student to supply a core of information as he is enrolled in the institution. This card is then forwarded to the Department of Community Colleges at the state level and processed through computers with printouts to the State Department of Public Instruction. The printout is definitive to the level of identification by individual students and that particular student's information as it pertains to him. This serves as an effective base from which many different kinds of tables can be derived for management purposes. Much of this information is used for two main purposes--(1) planning and programming at the local level and (2) the establishment of recommended allocations to local institutions, the latter being based upon a full-time equivalency program.

As for what North Carolina is considering, I have mentioned briefly the proposal above for the elementary and secondary education program. The community colleges have found their particular reporting system to be adequate and propose to continue this reporting system. However, they are making an effort to improve the reporting system for the follow-up of students graduating or completing programs from the institutions.

The state feels that it is on the right road now to what should be done in relationship to the integrating of a planning, programming, and budgeting concept with Office of Education reporting requirements. Basically, the state is moving toward the adoption of the PPBS concepts through the establishment of a base system of reporting which will meet local needs. This is done on the consensus that state and local needs are continually much greater than the needs of the U. S. Office of Education. We believe from this approach we will be in a position to provide the U. S. Office of Education whatever data they need. This is especially true since the unit data which we collect will be on an individual student basis with summaries being forwarded to the Office of Education. This belief is founded on the basis that reporting requirements need to be built around (1) the history of the program, (2) the planning requirements, (3) the financial requirements, and (4) the evaluation requirements, while at the same time we must constantly be

conscious not only of legislative needs but also of needs of the U. S. Office of Education and the Congress of the United States. Therefore, in conjunction with the Program Planning and Development Section for Occupational Education in North Carolina, four major activities are under attack:

1. planning, or the structural design in strategic choices;

2. programming, or the transformation of strategies into programs;

3. budgeting, or the allocation of resources and budget dollars; and

4. systems procedures, or an analysis of the evaluation of the programs.

If a proper reporting system is implemented the data will be provided for planning, the recycling will show whether reporting has produced the needs indicated through the planning process, and the evaluation will further show whether the planning, programming, and reporting system has been effective. Mr. Doty has furnished you in his presentation with a sheet which really indicates the collection in its second phase. Therefore, North Carolina is beginning to move on a system which it feels will be effective and will meet its needs within the 1970's.

PROGRAM EVALUATION AND REVIEW TECHNIQUE

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The initiation of a planning, programming, and budgeting system in education is a complex undertaking. The present social, economic, and political forces in our society are increasing the demand for a management system like PPBS in the fields of education. Vocational education has received special public and governmental attention and has been mandated by federal legislation to perform discrete missions with limited resources. In addition, evaluation and accountability are very real concerns for every vocational education decision-maker. The management of vocational education is a difficult task.

The decision-maker in vocational education at the state level has a broadly-based scope of responsibility; a complex organization; diversified programs, services, and activities; public and governmental accountability; and the operation of a "big business." The common thread inherent in these factors is resource allocation. Any decision involves the allocation of resources. Therefore, management concepts and tools are a basic prerequisite for every vocational education decision-maker. A planning-programming-budgeting system is one of the new generation of managerial tools developed to furnish the modern decision-maker with relevant and timely information for impending resource allocation decisions. This system does not evolve by chance but must be planned, and its initiation managed, as it is developed and introduced into the current conduct of vocational education. Management science has a tool designed to assist the vocational education decision-maker in his development, preparation, and introduction of a functional PPB system into his organization. This management tool is program evaluation and review technique--PERT. The major concerns of this paper are management, PPBS, PERT, and how they relate to the introduction of PPBS in a State Division of Vocational Education.

The purpose of this paper is to discuss management in general and focus upon PERT as a tool to assist vocational education decision-makers in the initiation of a PPBS.

Management

Definition

Management is an inherent part of all educational endeavors. Education is a public institution operated by public resources for public purposes, and it requires the highest level of management by educators. Vocational education is an integral part of this educational institution, and its growth and conduct are predicated upon good management. Management exists in any organization where resources have to be allocated to attain desired goals and where uncertainty and scarcity of resources exist. This is the situation in vocational education. Management can be defined as purposeful and systematic decision-making involving the allocation of resources to specific means for achieving desired ends. Decisions are futuristic.

Functions

In vocational education we must ask the questions, What policies and goals, what organizations, what means, and what resources? Vocational education does make attempts to answer these questions, but how well? It is through the functions of management that vocational education can answer how well and can take the necessary action to improve its operation. The functions of management are planning, organizing, directing, and controlling. Through the employment of tools such as PPBS and PERT, management is better able to perform these functions.

Planning is the development of an initial set of decisions directed toward attaining specific goals by optimal means. In PPBS this involves the assessment of needs, the statement of goals and objectives, the exploration of alternatives, the analysis of alternatives, and the selection of the alternative(s) to be implemented. Planning is the foundation of all management activity and the building block upon which all other management functions are based. Planning is the initial function of PPBS and PERT.

Organizing is directly associated with the number, types of requirements, and arrangement of people within a social organization. It is based upon the development of lines and relationships of responsibility and authority. In vocational education we are concerned with the organization of personnel involved in program services and activities. This management function is inherent in the initiation of PPBS and a consideration in the employment of PERT.

Directing refers to the psychological and sociological factors involving the interaction of people, especially when that interaction is directed toward attaining a group-oriented goal. The directing function of management is concerned with the orientation of personnel, the motivation of the people involved, and with leadership activity directed toward guiding the staff's activities. Directing is based upon

communications. PERT is a tool designed to assist the manager in his effort to direct members of the organization in the initiation of PPBS because it serves as a communicating device.

Controlling is the recognition of deviations from the plan and involves the necessary corrective action to ensure goal attainment. Controlling is the ability to detect discrepancies between intentions and actualities and to take required action for the necessary adjustments. Control is based upon planning. In this sense, management control is the same as evaluation. Thus the adequacy of the plan will dictate the adequacy of the control. PERT, in addition to being a planning technique, is also an effective controlling technique in the development of PPBS for vocational education.

The use of PERT will help the decision-maker to plan, organize, direct, and control the development and installation of a PPBS at the state level for vocational education. PERT is a viable management tool for vocational educators in the conduct of their management functions.

The functions of management in general and the employment of PPBS and PERT in particular are concerned with several basic elements. These elements are:

1. resources-to-means-to-ends relationships,
2. people and things,
3. choices and uncertainty,
4. evidence and judgments, and
5. information.

Managers' decisions appear to incorporate the above-stated elements with varying degrees of emphasis. Therefore, it is important that vocational education decision-makers be aware of these basic elements with which they are continuously involved.

The resources-to-means-to-ends relationships provide the general context for decision-making. Decisions will involve people and things and center around choices and uncertainties. The decision is usually based upon some form of evidence and a generous mixture of judgment. The vehicle for management, and in turn for decision-making, is information. Information is the element which allows management to be a dynamic process and enables the decision-maker to employ management tools such as PPBS and PERT. Without information, one does not have a choice; without a choice, one does not have the opportunity to make a decision. The objective of PPBS and PERT is to provide the decision-maker with better information so he can make better decisions. In this effort, we will employ PERT to make better decisions concerning the implementation of a PPBS in vocational education.

Factors

In the management of an effort to initiate a PPBS with the use of PERT, what factors does the manager have to consider? The manager has three factors which he needs to consider and manipulate in order to achieve his goal: time, cost, and performance level. These factors form the management triad. They are directly related to each other, and a change in one is reflected by a change in the others. Level of performance is a direct function of time and cost. An example is the space program. President Kennedy stated that the United States would send a man to the moon and return him safely in 1970. In this example the time and performance factors were set; the only factor available for the manager to manipulate was cost. These same factors are the principle variables with which the manager must deal when he employes PERT. Our central focus is the use of PERT as a tool to manage the initiation and installation of a PPBS for Vocational Education at the state level.

PERT

PERT is a management tool used to plan and control a project or program. It basically employs the graphic techniques of network diagramming. It facilitates analysis and synthesis of the work involved and enables quantitative determinations to be employed. This technique demands and forces total project or program planning. The use of PERT by the manager provides the following:

1. definition of the work to be accomplished
2. specification of outcomes
3. graphic representation of work flow and interraletionships
4. estimations of time
5. awareness of work areas of high risk or uncertainty
6. resource requirements
7. cost estimation
8. output budget
9. scheduling framework
10. easy-to-communicate plan of action
11. basis for organizing and reporting
12. basis for control

13. information sources for data base development

14. structure for implementing change

The employment of PERT as well as most managerial tools is supported with an information system. A management information system (MIS) meets the extremely heavy demand for information required by planning efforts. The availability of relevant information will in large part dictate the adequacy of the planning effort.

Planning

The planning aspect is the first function of PERT. It is the most crucial part of any managerial technique or tool. All subsequent managerial actions or decisions are based upon the plan. The planning components of PERT include the definition of the work to be accomplished, a work flow graph or network time estimations, scheduling, and budgeting. These components are developed sequentially and are interdependent. The budget is based upon the full development of the preceding components. Likewise, the definition of work forms the foundation upon which the subsequent components are dependent.

Definition. Project or program definition is the process of determining what is involved and what has to be accomplished. Project or program definition proceeds on the assumption that a project or program can best be described in terms of a total system and that the principles of hierarchical ordering are applicable and feasible. A system is defined as a set of components which are interrelated and directed toward the accomplishment of a goal within a specific context. This approach enables the project or program to be viewed as a set or series of related activities that have to be accomplished to reach the desired goal. It is assumed that the goals and objectives can be arranged in a hierarchical nature. In addition, the system approach provides a basis for establishing the boundaries of the project or program.

A system analysis approach is used to disassemble the total project or program into manageable activities. The analysis may involve either deductive or inductive logic. In either case, the object is to determine what is to be accomplished in terms of manageable activities and to identify their interrelationships. This type of analysis will yield the work breakdown structure of the project or program. The lowest level of the work breakdown structure is termed work package. It is a specific set of tasks to be accomplished which will contribute one product identified in the work breakdown structure. There is no predefined level at which work packages will occur. However, they should meet the following suggested criteria:

1. clearly defined,

2. manageable,

PROPOSED WORK BREAKDOWN STRUCTURE

Level 1	2	3	4
To Implement a PPBS in an Educational Agency	Policy Statement	Commitment	Position Statement Involvement Allocations/Obligations
		Organization	Administration (Task Force) Working Staff (Coordinating Unit) Committees (Systems Teams) Advisory Council (Broad Representation)
	Knowledge Base	Assessment	Position (Status-Past/Present) Environment (Present/Future)
		Understanding PPBS	Orientations Presentations Publication Distribution Inservice Training Workshop
		Change Strategies	Public/Human Relations Dissemination Demonstration Integration
	Resource Requirements Document	Competency Based Personnel	Planning Specialists Management Specialists System Analysis Specialists Clerical
		Time	Work Packages Milestones Schedules
		Funds	Budget Items Special Accounts Work Package Costs
		Supportive Environment	Facilities Equipment Materials
		Consultants	Specialists Generalists
		Management Information System	Data Base Communication Channels Processing Capabilities
	Management Plan	Current Situation Need Objectives Alternatives Design/Development Implementation Budget Evaluation Feedback	

May 70
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3. short-term (time),

4. have definite start and stop points,

5. communicative, and

6. associated with one organizational unit.

The work packages should be so defined that they will facilitate the development of specifications. These will be necessary to the continuation of the planning process. A helpful technique is to determine the inputs needed, the processes involved, and the required outputs or products of each work package.

Work flow network. The network is a graphic representation of a project or program and employs the flow graph concepts of arcs and nodes which, in PERT, are referred to as activities and events. The network functions as a:

1. logical expression of a project or program,

2. communicative device,

3. facilitator of planning efforts,

4. basis for controlling, and

5. technique to highlight major areas of risk.

The elements of the network are activities, events, and representations of constraints and interdependencies. The activities are obtained from the work breakdown structure in terms of the work packages. The activities are descriptions of work as represented by outcomes or products, and they consume time and resources. They are normally written with an adjective, action verb, and a direct object (noun). The event is a point in time and does not consume time nor resources, but it is used as a reference point to describe the start or completion of an activity.

Special network elements are:

1. dummy activities--to show constraints,

2. milestone events--to signify a major point in time or completion of a major portion of the project or program, and

3. interface events--to designate the event which occurs in two or more sub-networks.

A route through the network is termed a pathway. The pathway allows one to follow the logical sequence of activities which results in

the completion of a major portion of the project or program or the entire project or program.

The general rules for network construction are:

1. It employs general computer logic;
2. There are no alternative pathways;
3. An event occurs only once;
4. An activity is constrained by its preceding event;
5. An event is constrained by its preceding activities; and
6. Only one activity line exists between any two events.

The generalized steps for network construction are:

1. determination of the need for networking the project;
2. establishment of prime and supporting objectives;
3. identification of the totality of work;
4. development of project definition;
5. statement of the boundaries of the network;
6. development of work breakdown structure;
7. determination of end objectives;
8. implementation of the approach to network construction;
9. choice of network symbology and format;
10. listing of event descriptions -
    a. must represent a clearly <u>definable</u> point of occurrence,
    b. must convey the same <u>understanding</u> to all network users, and
    c. must be <u>verifiable</u>;
11. listing of activity descriptions -
    a. may <u>represent</u> physical, mental, or administrative work, time delay, constraint, or a combination of these.

b. must be sufficiently detailed to identify resources,

c. must be sufficiently detailed to identify responsibilities for accomplishment, and

d. must convey the same understanding to all network users;

12. development of a graphic representation of the network -

a. general to specific or vice versa,

b. backward or forward;

13. choice of written or coded event titles and activity descriptions;

14. employment of accurate interdependency and precedence logic;

15. realistic application of internal and external constraints;

16. accurate interpretation of interrelationships;

17. affirmation of amounts of detail necessary;

18. critical examination to check for validity and completeness;

19. determination of frequency and format for updating; and

20. acceptance and understanding of network information at all levels of project execution.

Time estimations. Time estimations are the third component of the planning process in PERT. There are two types of time estimation--deterministic and probabilistic. Deterministic time estimates are usually single estimates based upon past experience or valid information. These estimates are used when certain activities are familiar or when the person responsible for the work package or activity has had experience with similar jobs. The probabilistic estimate involves two or more (most commonly three) estimates which recognize the uncertainty or risk existing in the activity. Either or both kinds of estimates may be employed in the network. Time estimates are a function of the activity (performance level) and the resources (costs) applied to it. During this time estimation phase, it is assumed that the planned resources will be available and used at an even rate of application.

Guidelines for estimation include:

1. assumption of a valid activity base;

2. estimation done by the person responsible for the work;

3. a basic time frame of a 40-hour week;

4. estimation of activity time done on the basis of random selection of activities; and

5. assumption that estimations will be objective, valid, and reliable.

After each activity has an estimated time for completion, a series of calculations can be developed which will produce earliest expected and latest allowable times for each activity, enabling the manager to identify the amount of slack available and the critical pathway in the network. The critical pathway through the network will require the greatest amount of time and also identify the series of activities which will demand the closest attention by the manager. The slack designates the amount of extra time existing on a particular pathway and informs the manager of areas of "free" time which he can manipulate. In addition to time calculations, there are statistical methods which when applied to the time estimation provide measures of variances.

If the total time for the project or program is in excess of the allowable or designated time frame, the manager has several alternatives available to him. He may:

1. parallel activities,

2. reallocate resources,

3. change the scope of the activity,

4. change performance specifications,

5. add resources, and/or

6. eliminate the activity.

Scheduling. Once the project or program has been defined, the work flow developed, and the time estimations completed, the process of scheduling can begin. Scheduling is the translation of the plan into a timetable showing the specific calendar dates for work packages and the assignment of resources to accomplish the planned activity within the specific calendar period. The scheduling process involves the determination of resource requirements, a set of calendar dates, and the arrangement of activities in a manner that will accomplish the ultimate goal within the resource and time constraints.

Resource requirements are determined by an analysis of the work package in terms of the quantity and quality of normal input (line-item) budget items. This includes personnel, services, communication, and other similar items. It becomes evident that the difficulty of this task is directly related to the adequacy of the specification of the work package defined in the project or program definition component. These resource requirements for each work package are then summed across work packages to arrive at the requirements for the total project or program.

The calendar dates for the schedule may be either directed (imposed upon the manager) or based upon the work package time estimates. Normally, dates are directed from some source which will place a real and pressing constraint on the scheduling process. In addition, limited resources impose another constraint upon the scheduling.

The scheduling process, or arrangement of calendar dates and resources to work packages, will necessitate the following considerations by the manager:

1. due dates and critical time periods,
2. application of resources over time,
3. sequence of accomplishments,
4. preclusion of serious peaks in the work loads,
5. technical limitations,
6. managerial judgments,
7. organizational policies and practices, and
8. contractual arrangements.

It is the concern of the manager in scheduling to minimize time and cost, maximize performance, and maintain a level application of resources and a balanced employment of managerial efforts. The schedule can be developed by use of a bar chest format. The horizontal axis represents time (calendar dates), and the vertical axis represents placement of the work package with a consideration of resource requirements. The work packages on the critical pathway in the network will, by necessity, form the major sequence of work. Other work packages will be placed upon the schedule as they are influenced by network constraints, amount of slack time associated with the work package, availability of required resources, and managerial judgment.

Realistically in scheduling, time (in terms of dates) and resources (always limited) will normally dictate changes in the plan as it has been developed to this point. Scheduling serves to provide a reality frame of reference. It is at this point in the planning process that time/cost/performance trade-offs are applied to develop an operational schedule of work.

Budget. The preparation of an output budget is the final component of the planning process in PERT. It is a financial expression of the plan. The output budget is a document which relates accomplishment to expenditures through a common value (dollars and cents) over time. A budget serves both a planning and controlling function of the life span of the project or program.

It is important at this point that the distinction between input (traditional or accounting) budget and output (product or management) budget be clear. The input budget focuses upon line item entries such as personnel, telephone, computer service, etc. This is necessary in estimating costs, but it is not meaningful for decision-making by management. Management needs output budgets which relate costs to outcomes or objectives. This method of budgeting enables the planner to interrelate clearly performance (objectives and work packages) and time (schedule) with cost. The budget will provide the information required for management of the project or program.

The output or management budget is developed from cost estimations. Cost estimations are based upon input (line-item) items which are directly associated with the previously developed resource requirements for the scheduling component of each work package. In addition, a coding or numerical accounting system for the work breakdown structure is developed. Each work package has costs estimated in terms of direct and indirect costs based upon fixed and variable cost factors. In this manner the work package becomes the basic costing unit in an output budget.

The costing procedures are similar to time-estimating steps. These procedures involve:

1. costing of single work packages or activities;
2. random selection of work package for costing;
3. estimation by the person responsible for the task or job; and
4. applying the costing concepts of
    a. costing units,
    b. direct and indirect costs, and
    c. fixed and variable costing factors.

The budget is obtained at any level of work breakdown structure by summation of appropriate work packages or costing units. It is also necessary to be aware that the budget figures will be influenced by manager or planner judgment and contractual requirements. One additional point of concern: it is imperative that the control of the budget be in the hands of the manager.

Control

The completed plan provides the basis for control in the employment of PERT. Control is the ability to detect deviations between intentions and actualities and to provide the necessary corrective action to ensure goal attainment. The relationship of planning and controlling is

crucial. The more detailed, clear, and precise the initial plan, the greater the potential for effective and efficient control. The concepts of change or adjustment provide the framework for control.

The key factors in control are:

1. a standard or criterion base--derived from the program definition and specifications;

2. measurement systems--associated with time schedule, budget, and indicators of performance levels;

3. feedback--related to communications and time delays in providing information for managers; and

4. decisions--action alternatives available to the manager are to accept, revise, recycle, replan, or terminate.

The factors are inherent in the three phases of control. These phases include reporting guidelines, management actions, and corrective procedures. The focus of each phase is on the elements of time, cost, and performance as they relate to the accomplishment of work packages.

Reporting guidelines. Reporting guidelines are unique to each application of PERT. The format and content of the reports and their scheduling will in general depend upon the nature of the program, the manager, and the parent organization. Reports in any form are a communicative device. They are a means of transmitting information. Reports should provide the following types of information:

1. up-dating information for the data base of the MIS;

2. specific and accurate information concerning time, cost, and performance;

3. information focusing on the identification of problems; and

4. information dealing with both process and product.

Reporting is the information vehicle for control. Sources of reports are determined by the location of required information, and channels of reporting will be based upon the organization structure and policies. However, the responsibility for reporting lies with the program manager.

Management action. Once the information is obtained, action must be taken. The quantity, quality, and timelinesss of the information are critical. The identified problem or deviation from the plan is refined to provide a valid basis for analysis. Problem analysis focuses upon the determination of cause and effect relationships. Determination of the cause of the problem leads the manager to create alternative solutions. These solutions will then be tested by some form of simulation to judge

their relative effectiveness. Upon evaluation of the alternative, the manager makes a decision on the alternative solution to implement and the course of action to follow.

Corrective procedures. The corrective procedures are based upon the manager's action and have significant implications for goal achievement. Corrective procedures are initiated with the implementation of corrective action. This action will result in a modification of the initial plan. It is logical to assume that through the course of an actual program to which PERT has been applied, many revisions of the initial plan will take place before the program is completed or achieved. Concurrent with the modification of the plan, corrective procedures are needed to provide monitoring of the impact or influence of the corrective action. It is necessary to determine the direction and magnitude of change and how it currently relates to the modified plan. The base point of reference for all control action is the goal of the program.

Summary

It is through a comprehensive planning and control model like PERT that a PPB system can be more effectively and efficiently initiated and installed in a State Department of Vocational Education. The components inherent in PERT provide the manager with tools to improve his decisions and direct his efforts in the attainment of a functional PPBS.

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LOCAL-STATE PLANNING RELATIONSHIPS

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The PPB concept requires getting local schools to survey objectively and analyze their needs, program these needs in a systematic manner, project and establish priorities, and reflect a reasonable request for funds. Good planning requires the involvement at the local school level of students, lay people, general education personnel, vocational personnel, guidance personnel, and administrative personnel.

My function in this conference, as I understand it, is to relate to you in a very practical manner how a county school system attempted PPB; how this information was transmitted to the State Department; the local-state relationships inherent in the process; and a critique of the Handbook planning format, procedure, and allocation of resources.

The school system to which I refer has ten high schools. The vocational program included primarily traditional agriculture and home economics, with minimal offerings in trade and industrial education and distributive education. While the economy of the area changed over the years from an agricultural economy to a business-industrial-agricultural economy, the vocational programs did not change with the economy and mode of life. The county school administration and some citizens began to realize the need for more occupational education and moved to employ a local director for occupational programs. They realized their major impediment was a lack of knowledge and expertise in the administration of vocational education programs.

It was apparent in the beginning that teachers (vocational and general education), administrators, lay citizens, employers, and students would need considerable orientation in the process of planning and programming occupational education programs. The director of occupational education surveyed the situation and oriented county-level administrative personnel regarding planning, programming, and budgeting for occupational programs. Constant emphasis was placed on two "facts of life" regarding vocational programs, i.e., they are expensive, and they must be flexible. Once the central office staff began to see the possibilities, the local director approached the state office regarding the initiation of planning and the use of state resource personnel to assist in the PPB process.

A meeting was held with all vocational personnel before the opening of the regular school session. They were informed that henceforth vocational education programs would be planned at the local level and

that planning should involve everyone concerned with vocational education. It was suggested that program offerings should be based on student aspirations and employment demand rather than on the "convenience considerations" used in prior planning with line item budgets.

It is well known in education circles that the success or failure of most educational endeavors is contingent upon the philosophy and commitment of local administrators (principals of individual schools). The principals were visited and oriented to the PPB concept and to federal and state policies pertaining to vocational education.

Each school organized a planning committee, involving at a minimum the following types of individuals: vocational education personnel, the principal, guidance director, at least one general education teacher, lay citizens, and at least one student. The director of occupational education met with each planning committee at least twice to suggest procedures and provide orientation.

Since we are approaching this matter in a very practical manner, I refer you to the handouts for an indication of our PPB procedure. (See Appendix B.)

The information requested by the Central Office in step six of Exhibit 1 provided most of the data necessary for drafting our county-level "local Plan for Vocational Education."

I suspect that most of you view this as an extremely simple process. I submit that most of those involved with this type of planning at the local level are completely overwhelmed with such a system. They do not understand the need for such extensive planning and, consequently, are not highly motivated to proceed with implementing the process. It was apparent in the beginning that we must make those involved in this planning process keenly aware of the need to systematically plan, program, budget, and evaluate vocational education programs. It was also apparent that these "local school planners" would need constant counsel, advice, and support. We decided that the best way to provide local planners with orientation, support, and advice was to hold a weekly workshop during the planning period. Exhibit 6 reflects the contents and procedure for the workshop. The state office gave us tremendous support during this period. This workshop provided the articulation vehicle among individual schools, the county's central office, and the state office. The local director also maintained constant contact with Mr. Belcher, Assistant Director for Program Operations, and Mr. Bullard, Associate Director for Program Planning and Development.

Observations and Critique

Local Level

Do not presume that local administrators, teachers (general and vocational), guidance counselors, and others are familiar with the broad

scope of vocational education, its processes, procedures, regulations, policies, and so on.

Provide adequate clerical assistance. There is much detail and minutia involved in this process, and professional-level personnel are usually not disposed to perform these tasks at a high and constant level.

Some "released time" should be provided the chairman and/or coordinator of each school planning committee. The process requires much planning and articulation in order to be valid and effective.

The involvement of lay people in the planning process is invaluable in terms of gaining approval of budgets and requests for funds (politics, public relations, etc.).

The involvement of school personnel (general education, vocational, guidance, and administrative) is invaluable in terms of giving them insight into the need for change, flexibility, and so on.

State Level

Local units should be given adequate time to complete the PPB process in a relaxed manner.

Perhaps population, labor market, and job opportunities data could be provided by the state office. This is particularly a valid suggestion if there is computer time available.

The state office should strongly emphasize and suggest to LEA chief administrators that local planners must have adequate clerical support.

Each LEA should have an individual who is thoroughly competent in the administration of occupational education assigned as a local planner, in order for PPB to be effective.

PPB loses much of its effectiveness unless the chief administrative officer is thoroughly committed to the process.

This process loses much of its effectiveness when the State Department does not allocate resources, based on planning, in time to be beneficial to the LEA for its final programming and budgeting.

ESTABLISHING A PLANNING CONCEPT AND BUDGETING CYCLE

Harvey H. Fischer

Special Assistant to the Director
North Carolina Department of Community Colleges

My Discussion Will Include:

Some problems involved in state planning

Our planning concept

Our plans

Our proposed planning and budgeting cycle

Problems in State Planning

Creation of a planning staff

Involvement of staff in planning versus the constant struggle with daily problems

Inadequate information system

Coordination with other state agencies

Recognition of political considerations

Solutions for these problems have not been found, but they are under consideration.

Dr. Williams and his study project provided planning guidance, coordination with other agencies, and valuable comments on our plans.

Work has not been completed on the information system. Input is good, but output is almost non-existent.

Total involvement versus contracting with outside agency to do our planning.

Coordination with other state agencies has been carried out through monthly progress meetings and Dr. Williams' work between the Occupational Education Division and our department.

Planning staff has not been created except for one person.

Political considerations cause changes to objective and subjective planning considerations.

Our Planning Concept

First consideration was to eliminate controversial "sacred cow" considerations (Handout #1).

Following subjects are not included in our plans at this time:

1. Organization of the system
2. Lines of authority and coordination between state and local levels
3. Number and locations of institutions
4. Our system of formula budgeting
5. Curriculum content and the educational process
6. Articulation
7. Accreditation
8. Admission policies
9. Tuition
10. Faculty qualifications and characteristics
11. Student guidance and counseling
12. Teaching innovations and research

A number of these considerations are under study or have been resolved in our system.

What was left: a requirement for an objective planning effort that would guide the institutions toward educational programs that would properly serve the needs of the people and the economy of the state.

HANDOUT #1

Considerations Not Included in Planning Effort, Initially

1. Organization of the community college system was not studied.

2. Lines of authority and coordination between state and local level were accepted as they presently exist.

3. Numbers and locations of institutions were not examined.

4. Existing system of formula budgeting was accepted. It will require study when, and if, a PPBS is undertaken.

5. Curriculum content and educational process were not examined. The educational process remains with the educator, and it is the means of achieving the goals established in the long-range plan.

6. Articulation is not included in the planning effort.

7. Accreditation was not studied.

8. Admission policies were accepted as they now exist.

9 Tuition was not included in the planning effort.

10. Policies on faculty qualifications and characteristics were not examined.

11. Student guidance and counseling was not studied but was recognized as an area requiring continuing research and innovation.

12. Research and teaching innovations are not examined in the planning effort.

Our planning, to date, is based on manpower training needs because it is the best method available, in today's state-of-the-art, for estimating educational and training needs. However, we must never overlook the need to meet the complete fulfillment of the individual. Additional planning experience should lead us into a broadened concept that will allow us to include "social returns," as well as manpower requirements in our future planning efforts.

We had to establish these needs, and they became manpower, educational, and training requirements. Our planning concept is based on the trained manpower needs of the economy of the state during this decade.

We prepared a concept for a long-range, ten-year plan; a short-range, four-year (two biennia) plan; and a model budget for one biennium.

The plans are based on a population projection and a model of the economy during the decade.

The concept was finalized, and a contract was signed with the RTI to prepare our plans.

Organization Of Our Community College System

It has three major parts (Handout #2).

Institutions have a multi-role; 54 institutions offer programs shown on Handout #3. Fifteen of the institutions are comprehensive, also offering the freshman and sophomore years of college.

Purpose (or mission) and goals on Handout #4. The goals are not quantifiable.

Our Plans

RTI's first task was to develop a planning process that would include alternatives and a decision-making process (Handout #5).

Second task was the preparation of the population projection and the economic model.

Using this information base and the goals, planning was carried out for the ten-year plan by establishing the training needs that should be met by our system. Four alternative plans were prepared, and one was recommended to the State Board of Education.

Decision-making process to include recommendations by the Community College Advisory Council and decision by State Board of Education (Handout #6).

Extension programs must be continued with the curriculum programs and adult basic and high school education. An order of magnitude is indicated on Handout #7.

Decision by the State Board of Education provided a basis for the finalization of all plans: ten-year strategic plan, the four-year operating plan, and the two-year model budget.

Four-year operating plan contains quantifiable objectives in the form of "graduates" from the system. Handout #8 illustrates these objectives for the statewide system for the next four years.

Information is further broken down by planning areas for the management of information.

Institution Planning

Final success of the planning effort will depend on the plans prepared by the institutions.

Statewide plans will serve as planning models and as sources of information for use by the institutions as they do their planning.

Institutional planning has started with RTI's preparing a model for one institution that can be used by all institutions.

Institutional four-year operating plans will establish quantifiable short-range objectives by indicating:

1. the types of skills they should be producing for their communities,
2. the numbers that should be produced, and
3. the time frame in which the skills should become available.

The quantifiable objectives will become a management tool for the institutions.

Planning and Budgeting Cycle (Handout #9)

State does not have a formal budgeting cycle. Timing and experience of last two budget preparation cycles have been used to prepare a budget cycle for the community college system.

Requests for budget information will be made by department. Additional time has been allowed for preparation of budget information to avoid "crash jobs."

Planning cycle has been phased into budgeting cycle to provide approved plans for preparation of budget information.

1973-75 biennium is "target" for use of plans in preparing budget information.

Planning cycle will be adjusted during next two calendar years to reach a regular planning and budgeting cycle by calendar year 1973.

PPBS

Our plans are designed to be used with our present budgeting system.

Plans also designed to be converted to a PPBS when the state elects to undertake such a conversion.

HANDOUT #2

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

STATE BOARD OF EDUCATION

PROVIDES POLICIES, REGULATIONS AND STANDARDS

DEPARTMENT OF COMMUNITY COLLEGES

IMPLEMENTS AND ADMINISTERS POLICIES, REGULATIONS AND STANDARDS OF THE STATE BOARD OF EDUCATION AND COORDINATES THE WORK OF THE INSTITUTIONS

INSTITUTIONS

PROVIDE THE EDUCATIONAL AND TRAINING PROGRAMS

HANDOUT #3

MULTI-ROLES OF ALL INSTITUTIONS

- OCCUPATIONAL EDUCATION (TECHNICAL)

  TWO-YEAR PROGRAMS TO TRAIN TECHNICIANS

- OCCUPATIONAL EDUCATION (VOCATIONAL)

  ONE-YEAR PROGRAMS TO TRAIN CRAFTSMEN

- OCCUPATIONAL EXTENSION PROGRAMS

  SHORT COURSES TO RETRAIN OR UPGRADE EMPLOYED PERSONS

- ADULT BASIC EDUCATION

  PROGRAMS FOR PERSONS WITH LESS THAN 8 YEARS OF EDUCATION

- ADULT HIGH SCHOOL EDUCATION

  PROGRAMS TO QUALIFY ADULTS FOR HIGH SCHOOL DIPLOMA OR CERTIFICATE

- GENERAL ADULT EDUCATION

  SHORT COURSES TO SERVE ADULT GENERAL EDUCATION REQUIREMENT OR AVOCATIONAL INTERESTS

- NEW INDUSTRY TRAINING

  SPECIAL TRAINING PROGRAMS FOR NEW INDUSTRIES OR EXPANDING INDUSTRIES

- MANPOWER DEVELOPMENT TRAINING ACT

  OCCUPATIONAL AND BASIC TRAINING FOR UNEMPLOYED DISADVANTAGED

HANDOUT #4

Purpose

The purpose of the North Carolina Community College System is to fill the gap in a broad range of educational opportunity between high school and the senior college or university. In carrying out this role, the system of technical institutes and community colleges offers occupational, academic, and cultural education and training opportunities from basic education through the two-year college level, at a convenient place and at a minimal cost, to anyone of suitable age who can learn and whose needs can be met by the institutions within the system.

Goals

1. To open the door of each institution to all persons of suitable age, who show an interest in and who can profit from the instruction offered, with no individual denied an educational opportunity because of race, sex, or creed.

2. To provide a variety of quality postsecondary educational opportunities at less than baccalaureate level and consistent with the abilities, desires, and needs of the students to fit them with the skills, competencies, knowledge, and attitudes necessary in a competitive society.

3. To provide for industry, agriculture, business, government, and service occupations the pre-service and in-service manpower training that requires less than baccalaureate-level preparation.

4. To provide specific training programs designed to assist in fostering and inducing orderly accelerated economic growth in the state.

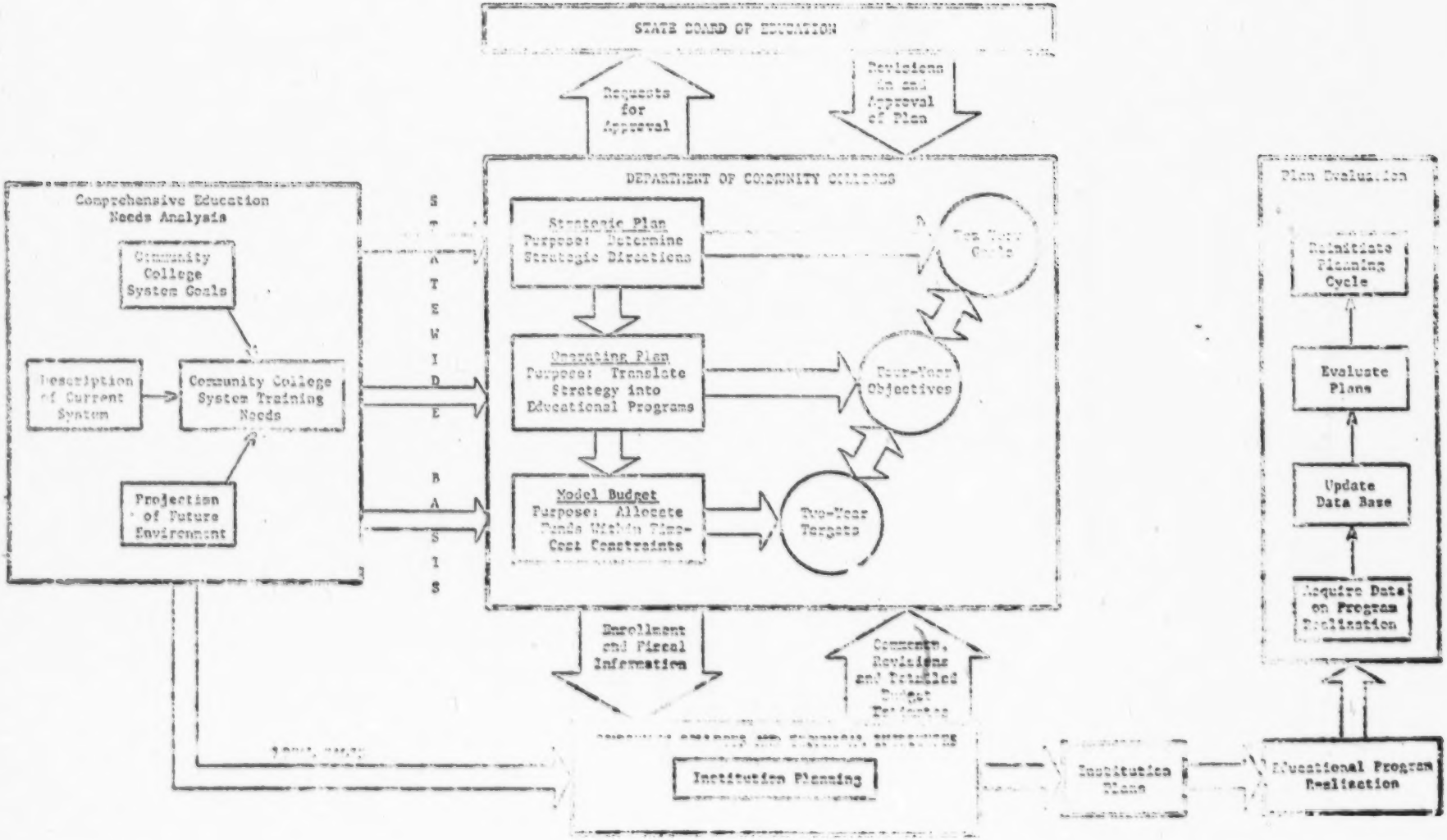
5. To provide activities and learning opportunities which meet the adult educational and community service needs of the residents of the community by an institution.

6. To direct the resources of the community college system toward a search for solutions to urgent community problems.

7. To provide, in both curriculum and non-curriculum programs, the education needed to assist individuals in developing social and economic competence and in achieving self-fulfillment.

8. To improve the services of the institutions and the quality of the education and training opportunities through constant evaluation and study.

HANDOUT #5


STATE BOARD OF EDUCATION
Requests for Approval
Revisions in and Approval of Plan
DEPARTMENT OF COMMUNITY COLLEGES
Comprehensive Education Needs Analysis
Community College System Goals
Description of Current System
Community College System Training Needs
Projection of Future Environment
S T A T E W I D E B A S I S
Strategic Plan
Purpose: Determine Strategic Directions
Operating Plan
Purpose: Translate Strategy into Educational Programs
Model Budget
Purpose: Allocate Funds Within Time-Cost Constraints
Ten-Year Goals
Four-Year Objectives
Two-Year Targets
Enrollment and Fiscal Information
Comments, Revisions and Detailed Budget
Institution Planning
Institution Plans
Plan Evaluation
Delimitate Planning Cycle
Evaluate Plans
Update Data Base
Acquire Data on Program Utilization
Educational Program Evaluation

HANDOUT #6

COMMUNITY COLLEGE SYSTEM GRADUATES

AND ENROLLEES, 1970-80 DECADE

	GRADUATES NUMBER (000)	ENROLLMENTS NUMBER (000)
COLLEGE TRANSFER	97.1	171.9
TECHNICAL	111.3	258.3
VOCATIONAL	81.8	174.9
ADULT HIGH SCHOOL	224.6	246.2
ADULT BASIC EDUCATION	166.0	249.0
TOTAL	680.8	1,100.3

HANDOUT #7

EXTENSION PROGRAMS

COMMUNITY COLLEGE SYSTEM ENROLLMENT TRENDS

(Unduplicated Headcount)

	1968-69		1979-80		Annual Growth Rate 1968-1980 (Percent)
	Enrollments	Percent	Enrollments	Percent	
General Adult	71,381	29.6	230,400	35.3	11.3
*Occupational	86,146	35.8	208,900	32.0	8.4

*Occupational Education Extension includes:

Occupational Extension - projected at 30% of total technical and vocational FTE enrollments (trend of past 3 years)

MDTA - projected as 2,500 FTE enrollment per year (a moderate increase over trend of past 3 years)

New Industry Training - enrollment projected as a function of the employment growth for each year

HANDOUT #8

OCCUPATIONAL EDUCATION

STATEWIDE GRADUATION TARGETS

	TECHNICAL		VOCATIONAL	
	1971-73	1973-75	1971-73	1973-75
TOTAL	15,793	19,105	15,331	17,822
PROF, TECH, KINDRED	1,750	2,131	459	518
ENG. TECH.	49	58		
MED & HEALTH	486	569	166	184
TEACHERS, EL. & SEC.				
OTHER P, T, K	969	1,210	188	219
MGRS, OFFLS, PROP.	3,129	3,772	1	2
CLERICAL & KINDRED	7,671	9,331		
STENO, TYP, SECTY	3,937	4,864		
OTHER CLERICAL	3,734	4,467		
SALES WORKERS	1,715	2,044	699	803
CRAFTSMEN, FOREMEN	1,302	1,555	5,125	5,945
CONSTRUCTION			630	718
MECH & REPAIR	27	34	2,508	2,898
METAL			584	684
OTHER	1,275	1,521	1,403	1,645
OPERATIVES & KINDRED	73	86	5,884	6,906
DRIVERS & DELIV.	73	86	266	306
OTHER			5,618	6,600
SERVICE WORKERS	333	397	3,007	3,472
PVT. HOUSEHOLD			325	368
PROTECTIVE	116	139		
FOOD	158	187		
OTHER	59	71	2,682	3,104
LABORERS, EXC F & M				
FARM OCCUPATIONS	66	83	261	291

HANDOUT #9

Planning and Budgeting Cycle - 1973

Planning	1973	Budgeting
	Jan	Start 1973-75 budget hearings before legislature.
Institution plans for periods 7-1-73 to 83 and 7-1-73 to 77 completed.	Feb	
	Mar	
SBE reviews and approves institution plans for periods 7-1-73 to 83 and 7-1-73 to 77	Apr	
	May	1973-75 budget received from legislature.
SBE provides final guidance to institutions on their plans.	Jun	
	Jul	
	Aug	
	Sep	
Institutions and staff use 1973-77 plans to prepare 1975-77 "A" budget FTE projections.	Oct	Institutions and staff asked to prepare 1975-77 "A" budget projections.
DCC starts revision of statewide plans for 7-1-75 to 85 and 7-1-75 to 79.	Nov	
	Dec	DCC receives and reviews 1975-77 "A" budget FTE projections.
		CCAC holds meeting to form committees to start work for preparation of recommendations for 1975-77 "B" and "C" budgets.

Planning and Budgeting Cycle - 1972

Planning	1972	Budgeting
	Jan	- 1973-75 "A" budget FTE projections presented to SBE.
		- 1973-75 "A" budget FTE projections forwarded to BD.
	Feb	- BD forwards "A" budget FTE projections to ABC.
		- DCC receives 1973-75 "A" budget guidance from ABC.
		- CCAC reviews committee recommendations for 1973-75 "B" and "C" budgets.
	Mar	- DCC submits "A" (dollar) budget to BD.
		- CCAC recommendations for 1973-75 "B" and "C" budgets considered by SBE.
Revised statewide plans for periods 7-1-73 to 7-1-83 and 7-1-73 to 77 completed.	Apr	- 1973-75 "B" and "C" budgets forwarded to BD.
SBE reviews and approves statewide plans for periods 7-1-73 to 83 and 7-1-73 to 7-1-77.	May	
	Jun	
	Jul	- Community College System plans and programs presented to ABC.
	Aug	

Planning and Budgeting Cycle - 1972 (continued)

Planning	1972	Budgeting
Institutions start revision of plans for periods 7-1-73 to 7-1-83 and 7-1-73 to 7-1-77.	Sep	DCC receives guidance for 1973-75 "A", "B", and "C" budgets from ABC.
	Oct	DCC starts preparations for 1973-75 budget hearings before legislature.
	Nov	
	Dec	

Planning and Budgeting Cycle - 1971

Planning	1971	Budgeting
Institution plans for periods 7-1-71 to 81 and 7-1-71 to 75 completed.	Jan	Start 1971-73 budget hearings before legislature.
	Feb	
	Mar	
SBE reviews and approves institution plans for 7-1-71 to 81 and 7-1-71 to 75.	Apr	
	May	1971-73 budget received from legislature.
SBE provides final guidance to institutions on their plans.	Jun	
	Jul	
	Aug	
	Sep	
Institutions and staff use 1971-75 plans to prepare 1973-75 "A" budget FTE projections.	Oct	Institutions and staff asked to prepare 1973-75 "A" budget FTE projections.
DDC starts revision of statewide plans for periods 7-1-73 to 83 and 7-1-73 to 77.	Nov	
	Dec	DDC receives and reviews 1973-75 "A" budget projections.
		CCAC holds meeting to form committees to start work for preparation of recommendations for 1973-75 "B" and "C" budgets.

Planning and Budgeting Cycle - 1970

Planning	1970	Budgeting
	Jan	- 1971-73 "A" budget FTE projections presented to State Board of Education (SBE).
		- 1971-73 "A" budget FTE projections forwarded to Budget Division (BD).
	Feb	- BD forwards "A" budget FTE projections to Advisory Budget Commission (ABC).
		- Department of Community Colleges (DCC) receives "A" budget guidance from ABC.
		- Community College Advisory Council (CCAC) receives committee recommendations for "B" and "C" budgets.
	Mar	- DDC submits "A" (dollar) budget to BD.
		- CCAC recommendations for "B" and "C" budgets considered by SBE.
	Apr	- 1971-73 "B" and "C" budgets forwarded to BD.
	May	
	Jun	
Institutions start planning for periods 7-1-71 to 81 and 7-1-71 to 75.	Jul	- Community College System plans and programs presented to ABC
	Aug	

Planning and Budgeting Cycle - 1970 (continued)

Planning	1970	Budgeting
	Sep	DDC receives guidance for 1971-73 "A", "B", and "C" budgets from ABC.
	Oct	DDC starts preparations for 1971-73 budget hearings before legislature.
	Nov	
	Dec	

THE INTEGRATION OF PLANNING AND EVALUATION

Robert T. Williams

Center for Occupational Education
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This paper is partially based on ideas developed by Dr. Coster and Dr. Robert L. Morgan of the Center and on forms developed by Joe Malinski, program planner in occupational education for the Minnesota State Department of Education.

Through a contract with the North Carolina State Advisory Council on Vocational Education, our Center has agreed to produce a Master Plan for the Evaluation of Occupational Programs in North Carolina. This plan is still in its first draft and will not be delivered before September. The work of Coster and Morgan provides the conceptual framework for the plan; I will provide much of the detail. Some of its elements will also be woven into this presentation.

For the purposes of this paper, evaluation is defined as the comparison between the processes, outputs, and outcomes which are desired, and the processes, outputs, and outcomes which are actually observed. The planning process specifies those which are desired, principally through objectives. An evaluation of a single item may show that the observed level is greater than, equal to, or less than the desired level. The decision-maker may then prepare to make decisions which redirect segments of the system.

A moment is needed here to distinguish between output and outcome. Morgan brought this out in one of our staff meetings. An example of output is, "The system produced 500 trained auto mechanics in FY 70." An example of outcome is, "Of the 500 trained auto mechanics which the system produced in 1970, 365 of them are employed in the field for which they trained." Output refers to what the system produced; outcome takes into consideration how this product was absorbed into the environment. This raises the question of whether we are responsible for placement of our products, and the answer is "yes." It is not enough to throw them into the labor market and then forget about them.

Under the definition used here, evaluation is definitely a part of the decision-making process. As such it cannot be delegated to subordinates and forgotten. Handout #1, A General Educational System Evaluation Model, does an excellent job of pointing this out. The three observation boxes all feed into a comparison box, and the results of these evaluations are returned to the appropriate decision-maker. For purposes of illustration, let the policy-maker be the State Board of Education, let the administrator be the State Director of Occupational Education, and let the

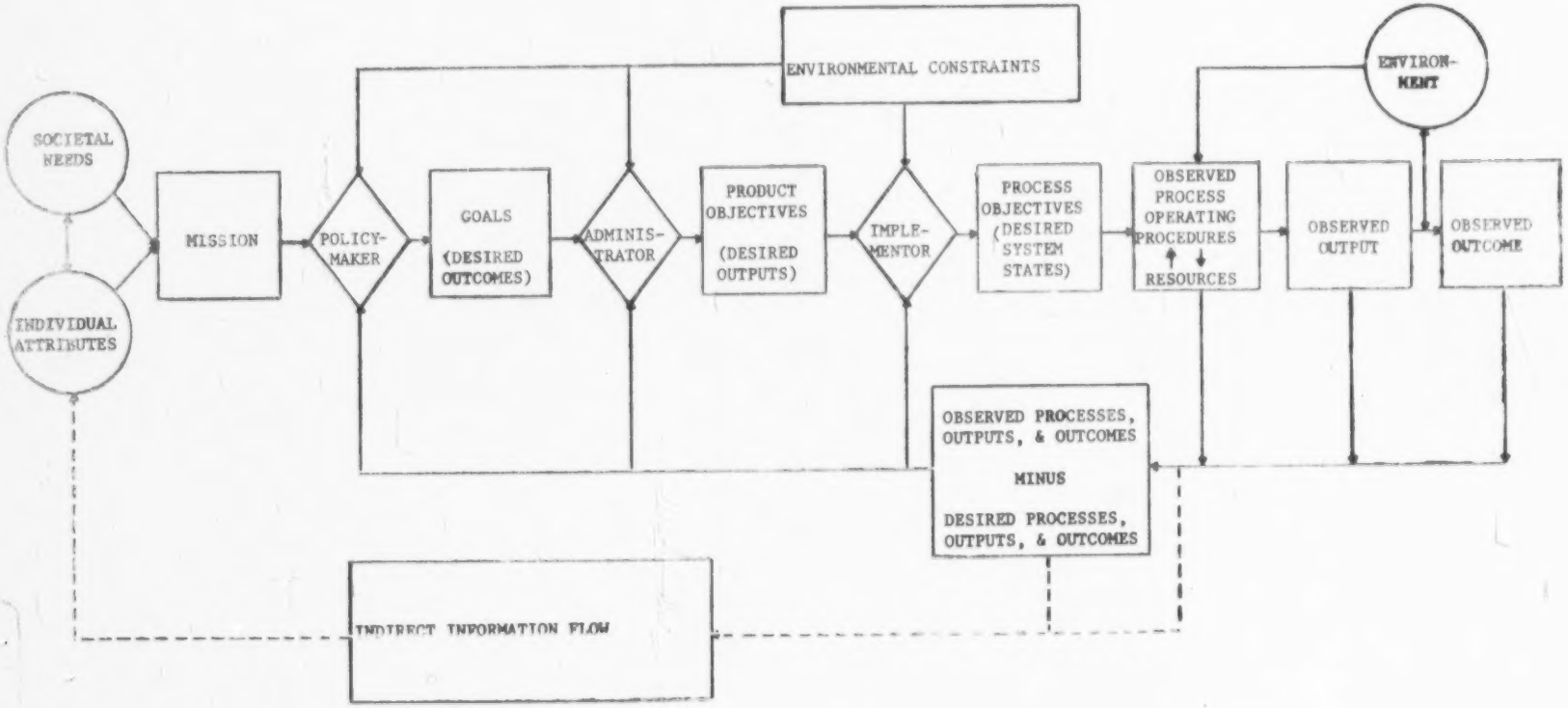
implementor be a local superintendent. A situation common to some states (including North Carolina) is a Board policy of uniform reimbursement to local units for pre-employment programs, irrespective of differential curriculum costs. At the same time, a goal of the Board is to encourage the establishment and operation of programs which will prepare persons for predicted and existing job opportunities. Given this framework, the State Director would have the responsibility for encouraging and redirecting programs so as to improve the match between training opportunities and job opportunities. The resource allocation formula is one of his most powerful tools. The local superintendent, after receiving information about job opportunities, reimbursement policies, and other aspects of the program, must make the decision of which curricula to offer. Local financial constraints can be expected to be given high priority by him, and he will, therefore, frequently choose a low-cost curriculum, with lower consideration given to job opportunities and student aspirations than we would hope for. This decision is repeated across the state. Observed outputs, then, can be expected to be higher than desired outputs for low-cost programs, and observed outputs for high-cost programs will likely be lower than desired outputs. Such comparative information must be fed back to the policy-makers when evaluation is part of the decision-making process. Evaluation serves a very important role in providing information which can identify causes with effects, and it will also point out conflicting policies. In this way, decisions based on subsequent planning will cause program changes to occur in desired directions.

Please notice that responsibility for different levels of the planning process rests with different levels of personnel. Relate this to the presentation by Pete Perkins. The mission of the system is given to it by legislation, and the goals are determined by the policy-making body--at least the top level of goals. However, the specification of product objectives is a technical and professional responsibility resting with the chief administrator and his staff. Finally, because the process objectives and operating procedures are the responsibility of the implementor, he should be instrumental in developing them. This model speaks directly to the restructuring of the organization and activities presently underway in so many of our state departments. I am indebted to its designers for their clarity and timeliness.

A second way of relating planning and evaluation uses the levels shown in Handout #2. Much of our statistical reporting doesn't get beyond Level 1, and even here we have often duplicated counting across years. We report output sometimes, but usually don't relate it to input. Handout #3 is an example of how they can be related. An unduplicated head count across years is essential when trying to relate observed output to desired output. Handout #4 is a planning document which relates future job opportunities to future curriculum outputs needed to fill those jobs. When observed outputs become available each year, they can be compared against desired outputs, and the decision-maker will have a basis for redirecting programs. Minnesota has prepared these data for all programs, and I have just pulled enough for an excerpt to illustrate the point. This type of input-output data ought to be available to every State Director--but even so it only covers two levels of evaluation

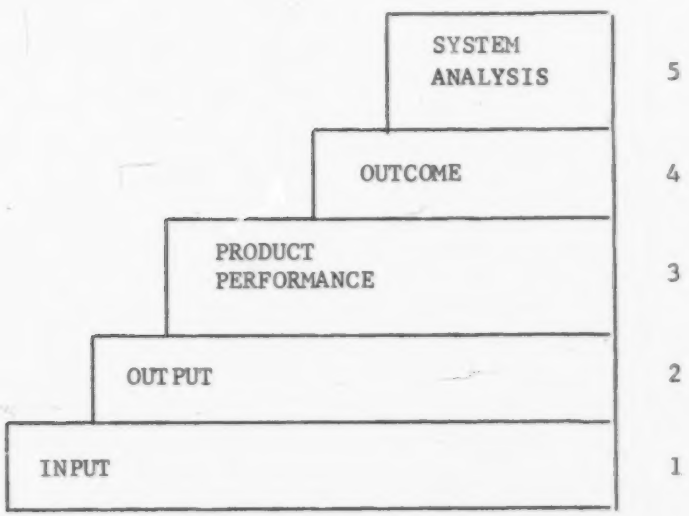
HANDOUT #1

A GENERAL EDUCATIONAL SYSTEM EVALUATION MODEL



HANDOUT #2

LEVELS OF EVALUATION OF INSTRUCTIONAL PROGRAMS
IN OCCUPATIONAL EDUCATION



HANDOUT #3

FULL-TIME STUDENT HEADCOUNT,
NORTH CAROLINA DEPARTMENT OF COMMUNITY COLLEGES

Academic Year / Curriculum	1959-60 Enr	1959-60 Gr	1960-61 Enr	1960-61 Gr	1961-62 Enr	1961-62 Gr	1962-63 Enr	1962-63 Gr	1963-64 Enr	1963-64 Gr	1964-65 Enr	1964-65 Gr	1965-66 Enr	1965-66 Gr	1966-67 Enr	1966-67 Gr	1967-68 Enr	1967-68 Gr	1968-69 Enr	1968-69 Gr	1969-70 Enr	1969-70 Gr	1970-71 Enr	1970-71 Gr
Commercial Graphics																					15	12	15	12
Dyeing & Bleaching											21	13	28	20										
Looping	220	129	148	89	64	37	44	27																
Seaming											20	14	25	18	27	20								
Sew. Mach. Oper.									48	36	37	24	22	14										
Stenography															55	32	41	15	12	6				
*V01 Auto Body Rep.							9	0	9	2	7	0	17	8	36	17	57	29	92	60	140	88	171	120
*V03 Auto Mech.					22	13	119	33	211	97	338	145	439	263	612	299	720	354	785	369	1,004	650	1,165	823
*V04 Aircraft Mech.																			15	0	80	44	90	63
V05 Bldg. Maint.																					12	8	15	10
V06 Bldg. Materials																	5	4						
*V07 Carpentry							4	0	0	0	17	2	40	13	17	6	11	8	34	22	66	46	72	53
V09 Cosmetology							41	23	78	59	66	50	73	61	94	77	120	100	288	248	423	335	448	363
V11 Dental Asst.					13	11	9	8	26	18	66	44	55	33	61	39	61	36	83	61	112	85	134	105
*V13 Diesel Maint.									3	2	12	8	37	25	39	24	47	27	59	35	73	46	73	49
V14 Draft.- Furn.					4	1	6	3																
*V15 Draft.-Bldg. Tr.					6	0	8	2	3	0	24	12	64	35	66	33	73	42	112	75	156	107	172	115
*V17 Draft.-Mech.	5	3	16	11	2	1	21	6	27	12	61	26	125	42	225	88	134	70	159	110	224	156	259	185
*V18 Electrical Inst. & Maint.									41	21	82	44	69	31	93	55	133	66	218	137	303	203	381	275
V20 Farm Machinery					16	8	20	7	9	3	12	3	5	5	11	4	9	6	0	0	0	0	15	12
V22 Graphic Arts-Printing									11	7	17	15	14	9	18	7	15	6	27	13	18	11	18	13
*V24 Air Cond. & Refr.	14	0	21	11	28	16	30	8	69	36	114	46	130	65	163	78	161	89	204	112	216	142	280	192
V25 Sawyer																							20	14
*V26 Heavy Eq. Mech.															19	9	17	9	29	17	33	18	33	18
V27 Lumber Grader																							20	14
*V28 Indus. Maint.																	1	0	3	1	49	27	60	38
V29 Light Construction																	21	13	54	32	60	30	72	54
V30 Med. Lab. Asst.											19	11	30	29	37	27	48	38	67	49	56	42	79	62
V31 Med. Off. Asst.																	10	9	24	15	38	27	66	51
*V32 Machinist	19	1	31	17	26	14	73	28	74	30	185	68	263	157	345	187	361	152	350	227	444	288	545	377
V34 Marine Mech.									7	3	9	5	22	10	30	18	36	5	15	7	38	24	44	28
*V37 Plumbing & Htg.											8	0	0	0	0	0	0	0	7	4	18	11	18	13
V38 Practical Nur.	267	202	310	230	354	266	396	290	425	298	592	458	696	507	752	561	905	683	958	766	1,012	812	1,020	829

HANDOUT #3 (continued)

Academic Year	1959-60		1960-61		1961-62		1962-63		1963-64		19[illegible]		19[illegible]		19[illegible]		19[illegible]		19[illegible]		19[illegible]		19[illegible]	
Curriculum	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]		[illegible]	
*V60 Furn. Prod. Asst.													27	9	1	11	11	11	15	1	1	18		
*V62 Radio & TV Serv.	17	0	14	12	13	7	14	8	48	30	97	58	165	74	53	33	243	179	302	120	295	195	330	241
V63 Radio & TV Broad.																			9	6	30	18	30	24
*V64 Sheet Metal													32	7	4	3	19	5	25	16	26	18		
*V68 Tool & Die Making									11	6	16	11	0	0	23	16	25	21	34	30	46	39	53	47
V69 Watchmaking																			9	0	15	8	20	15
*V50 Welding					7	5	48	19	57	26	67	39	103	77	310	108	301	163	317	185	485	322	557	389
*V60 Elec. Lineman													48	25	21	12	21	10						
V62 Farriering															7	7	10	8	12	10	12	10		
*V64 Heavy Eq. Oper.							14	10	26	20	39	34	57	44	76	44	81	40	54	50	86	53	38	56
V66 Hosp. Ward Clerk									88	60	11	8	17	3										
V69 Knit. Mach. Fixer			8	2	0	0	0	0	5	0	32	7												
*V70 Masonry			34	24	0	0	8	4	9	4	23	10	39	14	60	27	77	33	72	47	107	77	107	82
V72 Nur. Asst.											76	60	97	76	49	41	179	119	244	215	256	224	260	228
V73 Oper. Room Asst.																	13	7	11	7	15	11	20	19
*V78 Sew. Mach. Mech.													12	4	19	2	19	4	5	0				
V82 Upholstering									13	10														
V90 Ven. Mach. Maint.																					20	8	20	8
Vocational Totals	540	335	582	396	555	379	862	476	1,298	780	2,094	1,215	2,694	1,639	3,374	1,930	3,983	2,280	4,633	3,209	6,001	4,227	6,857	5,047
Aviation Tech.																					15	8	20	12
Home Econ. Tech.																					15	10	20	16
Med. Records Tech.																					12	5	15	10
T01 Agr. Bus. Tech.							8	1	32	21	69	40	119	67	118	58	162	79	146	87	245	159	253	169
T02 Agr. Chemicals									5	0	12	2	0	0	0	0	10	8	8	5	8	5	11	9
T03 Agr. Eq. Tech.							7	6	13	9	9	4	0	0	10	9	11	5	12	9	23	16	32	22
T04 Veterinary Med. Tech.													12	6	13	4	24	10	24	15	30	20	36	24
*T05 Food Processing															16	0	11	3	16	8	18	10	20	12
T06 Agr. Research																	26	4	27	19	36	25	44	30
T07 Forest Mgt.															74	5	130	57	123	82	169	109	128	123
T09 Ornamental Hort.															28	8	26	12	42	21	66	41	72	47
T10 Poultry & Livestock									12	4	23	9	24	11	15	3	29	6	28	11	36	27	3	3

HANDOUT #3 (continued)

Academic Year	1959-60		1960-61		1961-62		1962-63		1963-64		1964-65		1965-66		1966-67		1967-68		1968-69		1969-70		1970-71	
Curriculum	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr
T11 Rec. Grounds Mgt.																	4	0	4	1	15	5	65	34
T13 Soil & Water Cons.													16	11	14	8	19	10	21	12	30	15	39	22
T14 Wildlife Mgt.																					10	0	15	8
T15 Primary Wood Util.																								
T16 Accounting											10	0	102	36	221	79	197	96	207	103	320	174	378	222
T18 Bus. Administration											148	52	565	156	1,015	307	1,384	538	1,561	790	1,843	962	2,032	1,138
*T22 Data Processing-Bus.							37	11	53	17	99	32	187	59	246	63	384	128	469	171	536	217	573	295
*T23 Data Processing-Sci.							22	2	17	2	21	5	33	16	31	15	49	20	28	13	36	16	36	20
T25 Hotel & Motel Mgt.																	35	14	24	12	30	17	50	35
T26 Printing Mgt.													14	7	20	4	17	4	0	0	20	12	20	13
T28 Court Reporting															6	3	6	3	12	6	20	13	24	16
T29 Eng. & Tech. Sec.					20	0	31	20	69	42	84	32	50	15	74	28	121	26	84	27	96	34	96	40
T30 Executive Sec.											181	52	490	132	750	200	906	307	1,133	552	1,450	800	1,622	948
T31 Legal Sec.													13	6	21	10	48	14	35	15	68	34	93	49
T32 Med. Sec.													40	13	78	32	162	69	109	53	173	87	210	122
T34 Traffic & Trans.											6	3	41	12	46	19	36	20	23	13	40	22	48	28
*T36 Air Cond. & Refr. Tech.			6	3	8	5	11	7	40	14	44	14	51	22	35	12	29	11	35	13	34	14	36	18
*T37 Chemical Tech.					2	0	5	2	21	2	32	12	38	12	53	11	59	20	37	21	68	43	76	45
*T38 Civil Eng. Tech.	18	9	19	14	36	11	47	19	92	49	95	50	160	70	192	77	230	92	141	92	194	117	203	125
*T39 Electromech.																	8	1	6	0	12	4	16	6
*T41 Architectural Draft.											8	1	30	7	38	17	54	22	99	62	128	78	144	90
*T42 Furn. Draft. & Des.											8	1	15	4	12	11	18	8	11	7	18	10	18	10
*T43 Mech. Draft. & Des.			8	5	41	27	71	24	131	60	196	57	330	121	327	113	391	156	285	147	399	216	464	286
*T44 Electrical Tech.	11	5	20	3	11	6	28	12	12	11	22	8	40	17	31	19	37	16	34	17	48	24	55	28
*T45 Electronics Tech.	56	32	67	45	151	71	191	66	223	84	273	90	408	142	378	143	515	206	411	225	528	298	623	380
T46 Fire & Safety													16	8	9	5	18	14	15	10	20	14	24	18
*T47 Indus. Eng. Tech.															8	0	62	22	71	32	79	52	98	68
*T48 Instrumentation																	14	10	13	10	20	18	20	15
T49 Indus. Mgt. Tech.																					15	10	20	14
*T50 Manufac. Eng. Tech.					6	2	22	10	49	19	37	11	83	22	56	20	41	20	40	18	79	39	86	47

HANDOUT #3 (continued)

Academic Year	1959-60		1960-61		1961-62		1962-63		1963-64		1964-65		1965-66		1966-67		1967-68		1968-69		1969-70		1970-71	
Curriculum	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr	Enr	Gr
*T51 Mech. & Prod. Tech.	23	10	33	12	43	20	50	15	51	39	54	27	65	26	53	32	29	18	46	26	60	34	60	34
T52 Sanitary Eng. Tech.											18	12	20	9	24	12	18	10	16	10	24	12	24	12
T54 Dental Hygiene													36	32	66	45	38	22	65	55	109	83	131	97
T55 Dental Lab. Tech.									10	4	12	6	18	10	12	8	13	4	21	14	20	16	24	18
T56 Mental Health Tech.																			18	12	45	35	50	40
T59 Asso. Degree Nur.													80	31	188	95	148	94	213	124	247	154	340	223
T61 Radiologic Tech.																					10	6	15	10
T62 Phys. Ther. Asst.																			5	2	10	4	16	7
T63 Fire Sci. Tech.																	20	0	0	0	0	0	10	6
T64 Police Sci. Tech.																	24	9	59	26	90	39	113	60
T69 Photography																			14	10	15	12	20	15
T70 Commercial Art					4	2	26	5	35	10	58	11	72	32	81	27	110	45	133	79	194	118	233	148
T71 Culinary Sci.																			8	5	20	14	20	14
*T75 Furn. Manufac.													7	2	7	2	11	1	27	13	40	18	44	20
T76 Furn. Des.																			11	9	15	12	20	14
T77 Interior Des.																	32	14	40	36	50	30	60	40
T80 Library Asst.															5	5	10	0	13	5	20	15	20	15
T85 Marine Tech.											15	7	20	12	16	7	22	12	64	52	100	78	100	70
T88 Teacher Aide																			16	2	24	12	28	14
T90 Textile Tech.																					20	8	50	31
T95 Trans. Maint.			12	8	17	12	17	12	16	12	36	16	31	11	17	9	22	6	21	14	25	7	30	13
Technical Total	108	56	165	90	339	156	573	212	881	399	1,570	554	3,226	1,137	4,404	1,526	5,770	2,266	6,134	3,173	8,140	4,484	9,409	5,574
Vocational Total	540	335	582	396	555	379	862	476	1,298	780	2,094	1,215	2,694	1,639	3,374	1,939	3,943	2,280	4,633	3,200	6,001	4,227	6,857	5,047
Grand Total	648	391	747	486	894	535	1,435	688	2,179	1,179	3,664	1,769	5,920	2,776	7,778	3,465	9,713	4,546	10,767	6,373	14,141	8,711	16,266	10,621

Source: Williams, Robert T. An Analysis of Worker Supply and Demand Data for Program Planning in Occupational Education. Center Technical Paper No. 11. Raleigh, North Carolina: Center for Occupational Education, North Carolina State University, 1971.

HANDOUT #4a

EMPLOYMENT OPPORTUNITIES RELATED TO OCCUPATIONAL PROGRAMS

PROGRAM: Health 07.

LABOR DEMAND SUMMARY

O. E. Code	Instructional Area	Current Employment	CURRENT JOB OPPORTUNITIES: Demand: Metro 7 County	CURRENT JOB OPPORTUNITIES: Demand: Out State	Intensity	Growth	PROJECTED LABOR DEMAND: FY 70	FY 71	FY 72	FY 73	FY 74
.0101	Dental Assistant	2,200	25-99	25 or Less	70	Rapid	176	190	204	218	232
.0103	Dental Lab Tech.	450	1-25	25 or Less	80	Rapid	50	54	58	62	66
.0203	Medical Lab Asst.	1,200	50-74	Little or No	70	Rapid	168	181	194	207	220
.0205	Practical Nursing	8,700	150-199	200 & Over	70	Rapid	957	1032	1107	1183	1259
.0206	Nurses Aide	8,500	200 & Over	200 & Over	50	Rapid	850	935	1028	1130	1243
.0208	Hospital Food Supv.	350	1-25	25 or Less	70	Rapid	21	22	24	25	27
.0209	Inhalation Therapy Asst.	100	1-25	25 or Less	80	Rapid	12	12	12	12	12
.0210	Medical Record Tech.	300	1-25	25 or Less	70	Rapid	18	18	18	19	19
.0211	X-Ray Technician	380	1-25	1-25	70	Rapid	11	12	12	12	12
.0213	Surgical Tech.						22	23	24	25	26
.0214	Occ. Therapy Asst.						57	65	73	81	90
.0214	Certified Occ. Therapy Asst.						4	4	4	4	4
.0215	Physical Therapist						30	33	36	39	42
.0301	EKG Technician						14	16	18	20	22
.0301	EEG Technician						10	11	12	13	14

Minnesota

HANDOUT #4b

LABOR SUPPLY AND DEMAND SUMMARY AS RELATED TO INSTRUCTIONAL AREA

PROGRAM: Health 07.

Instructional Area	Vocational Education Training Output					Training Output By Other Sectors					Labor Supply Available					Approx. % Of Need Being Met	
	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1971	1972	1973	1974	1970	1974
Dental Assistant	93	96	124	171	173	30	30	30	30	30	123	126	154	201	203	76%	90%
Dental Lab Technician	--	--	35	60	60	--	--	--	--	--	--	--	35	60	60	--	89%
Medical Lab Assistant	125	163	218	231	259	--	--	--	--	--	125	163	218	231	259	73%	94%
Practical Nursing	627	761	816	875	895	100	100	120	120	140	727	861	936	995	1035	76%	73%
Nurses Aide	209	349	434	444	483	160	160	180	180	200	369	509	614	624	683	47%	55%
Hospital Food Supv.	16	16	16	16	16	--	--	--	--	--	16	16	16	16	16	76%	59%
Inhalation Therapy Asst.	--	--	10	10	10	--	--	--	--	--	--	--	10	10	10	--	85%
Medical Records Tech.	--	--	16	16	16	--	--	--	--	--	--	--	16	16	16	--	84%
X-Ray Technician	--	--	--	10	20	15	15	15	15	15	15	15	15	25	35	136%	203%
Surgical Technician	--	10	12	15	15	--	--	--	--	--	--	10	12	15	15	45%	56%
Occ. Therapy Assistant	26	33	61	69	72	--	--	--	--	--	26	33	61	69	72	45%	80%
Physical Therapist	--	--	30	30	30	--	--	--	--	--	--	--	30	30	30	--	71%
EKG Technician	--	--	5	5	5	--	--	--	--	--	--	--	5	5	5	--	23%
EEG Technician	--	--	5	5	5	--	--	--	--	--	--	--	5	5	5	--	38%

as shown in Handout #2. The data tell us nothing of the quality of the products, or even of what specific tasks they can perform. I recently saw a sheet from Georgia's latest curriculum guide for radio and television servicing in which they stated the tasks a student could be expected to perform upon completion of the first quarter, second quarter, etc We have reprinted it as Handout #5. This speaks to Level 3, product performance. Georgia is apparently building this into all their curricula. The whole realm of behavioral objectives is now available to help us with this. Such an approach will challenge us to accelerate moving away from the traditional curriculum practice of holding time constant while allowing achievement to vary, to the possibilities of holding achievement constant while allowing time to vary. We are beginning to make a tremendous breakthrough in practicing the principle of providing for individual differences, which we have espoused for so long.

Moving to Level 4 will require a more systematic use of follow-up data than many of us have done in the past. Again, follow-up information must be organized so as to be consistent with the information available for comparing Levels 1 and 2. I would think that follow-up studies involve more clerical than professional time, and that once a satisfactory form is designed and a cyclical routine established, follow-up studies would not be burdensome. We have had some discussion in this state concerning who should conduct follow-up studies. It would seem that management principles would favor local rather than state action. The local decision-maker must have this information for his evaluation uses. I would advocate a follow-up system coordinated by the state office, highly consistent across the state, and conducted by the local agency. Summaries of local returns should flow to the state office, not raw data. And finally, an October follow-up the first year after leaving the institution is insufficient.

Level 5 is highly dependent on the successful implementation of the first four levels. Before making predictive forecasts of what is likely to result from the adoption of various alternative programs, we need a data base of past performance in the system and of present performance levels. Dr. Gyuro covered this more fully yesterday morning. The first four levels in Handout #2 concentrate on the student; but in addition to the information obtained for these evaluations, Level 5 activities will also need cost data, by curriculum, by institution, by local unit, and in other ways. Handout #6 is an example of how such information can be organized for analysis. At the state level, a sheet could be set up for each secondary bricklaying program, for example, and comparisons on one or more items made. Significant deviations could be analyzed to try and determine why they occurred. We ought to identify the factors common to the 20% high programs which are absent from the 20% low programs, and vice versa. I would not advocate across-the-board adoption of this type of analysis because of the workload, but it could be useful for analyzing those problems that catch our attention through the management by exception principle.

At the local or state level, this same form could compare one curriculum against another, with the results contributing to a decision to discontinue, expand, or replace a particular curriculum.

HANDOUT #5

Georgia

RADIO AND TELEVISION SERVICING
OCCUPATIONAL COMPETENCY

The quarter courses in radio and television have been arranged so that at the end of any quarter the student will have developed certain occupational skills. Each additional quarter's work will enable him to become employed at a higher degree of competency. The student who begins his training the first quarter and continues to completion in the prescribed sequence will, of course, be the most skillful, as he should possess all the skills and related knowledge that can be acquired from each quarter's work.

FIRST QUARTER
SKILLS: Radio and television helper--At the end of this quarter, the student is familiar with radio and TV layouts. He can test and replace defective parts as well as pick up and deliver sets. He knows safety in handling TV.

SECOND QUARTER
SKILLS: Radio and television helper--Knows a good deal more about the fundamentals of electricity and its workings. Performs basically the same duties as the first-quarter student.

THIRD QUARTER
SKILLS: At the end of the third quarter the student should be able to locate, repair, and maintain all types of receivers (AM, FM, automobile) and stereo amplifiers.

FOURTH QUARTER
SKILLS: Troubleshoots, repairs, and maintains monochrome and color television and possesses the skills acquired through the first three quarters.

FIFTH QUARTER
SKILLS: Has a much broader knowledge of the troubleshooting procedures of solid state electronic equipment (receivers, monochrome and color television, stereo amplifiers).

SIXTH QUARTER
SKILLS: Possesses the skills of a well-trained radio and television technician and is able to install antennas, both simple and complex systems. He has a working knowledge of closed circuit television systems.

SEVENTH QUARTER
SKILLS: Troubleshoots, repairs, and maintains any and all types of home entertainment audio and visual equipment.

EIGHTH QUARTER
SKILLS: At the end of the eighth quarter the student has a well-rounded knowledge of both receiving and transmitting (fundamental) electronic equipment. He has the knowledge and skills to repair receiving equipment and the transmitting equipment.

HANDOUT #6

INSTRUCTIONAL PROGRAM ANALYSIS
PROGRAM ___ YEAR 197_

INPUTS (COSTS)	THIS PROGRAM	AVERAGE OF ALL PROGRAMS	20% HIGH	20% LOW
Instruction				
Admin. & Supv.				
Equipment				
Supplies				
Teaching				
Curriculum Dev.				
Cost per Student				
Length of Program				
Number of Students Entering				
Other Student Characteristics				
Other Inputs				
Other Inputs				

OUTPUTS (RETURNS)				
Number of Graduates				
Number of Graduates Working				
Other Outputs				
Other Outputs				
Number of Months Apprenticeship Credit for Training				
Other Outputs				
Other Outputs				

As stated earlier, evaluation is defined here as the comparison between the processes, outputs, and outcomes which are desired, and the processes, outputs, and outcomes which are actually observed. This presupposes that in the planning process, decision-makers commit themselves to desired processed, outputs, and outcomes. Without this commitment, this definition of evaluation is useless. The first four levels of Handout #2 present no trouble in relating to this, but Level 5 forces us to make some commitments about analytical measures and alternative programs. We must make some commitment with respect to an anticipated cost per student, or to using the results of analyses to change policies and formulas. Elaborating on the example used earlier, if a state objective were to seek enrollment of 100% of the annual need for machinists in machine shop programs, but the higher capital outlay cost prevented sufficient local commitment to offer enough training stations, then the analysis which points this out must be made available to the body which promulgated the equalization policy and the administrator who set the 100% objective. Recommended changes might be included. In this way evaluation is part of the decision-making process.

I do not advocate any one particular state staff organizational pattern for integrating planning and evaluation. The first requirement is a commitment to do so by the State Director. The second requirement is a planned management information system. The third requirement is the provision of qualified and interested personnel who are given the time to do this work. The fourth requirement is the establishment of a planning, programming, budgeting, and evaluation cycle in which each participant has a target date for completing his tasks.

Almost nothing has been said so far about process evaluation. The primary concern for process should be at the implementor level, which will frequently mean the local level. The adjective was "primary." North Carolina is one of those states where evaluation of the process of occupational education has been a state-level responsibility. Much of this should be delegated to the implementor and his staff--delegated, not dumped; over a period of time, not all at once; and only when he has the resources to get the job done. There are school systems in this state with no assistant superintendents, no local director of occupational education, and one supervisor for all 12 grades. A superintendent of such a system is not in a position to spend much time on the evaluation of the process of occupational education in his schools; but gradually he, or his principals, or area directors of occupational education, or state staff on loan for a full week or more will have to take over the job.

Many of the pieces usually belonging to process evaluation would seem to have an appropriate place in the system model depicted in Handout #1. I have given this area of evaluation little thought to date and have not yet discussed it with those who have been involved in process evaluation. The principal change might be in ways of formulating the desired objectives and recording the observation of procedures in such a way that the observations could be compared with the desired objectives. As before, self-evaluation will have a place at both the teacher and local

unit level. However, I would not expect the decision-maker to rely only on someone else's self-evaluation--refer to Mr. Doty's program independent data idea.

Regardless of whether the evaluation is product-oriented or process-oriented, its value will be largely determined by when and in what form its results reach the decision-maker and by his commitment to include its results in the planning process. I challenge you to begin tying evaluation results directly into planning. Do not wait for some researcher to do it for you. Start where you can now, and develop a schedule for expanding this concept, activity by activity. For most of us, the integration of planning and evaluation will be an evolutionary process.

APPENDICES

APPENDIX A

PLANNED CONFERENCE PROGRAM

ACTUAL CONFERENCE PROGRAM

CONFERENCE PLANNING COMMITTEE

CONSULTANTS

PARTICIPANTS

Planned Conference Program

SUNDAY, JULY 12

6:00 p.m. Registration and Materials Pickup

MONDAY, JULY 13

8:30 a.m. Welcome to North Carolina
Charles Law, Director
Division of Occupational Education
N. C. Department of Public Instruction

Welcome to the Center for Occupational Education
John Coster, Director
Center for Occupational Education

9:00 a.m. "The Center's Planning, Programming, and Budgeting Project"
Robert Williams, Project Director

9:30 a.m. "Laying the Groundwork for Planning, Programming, and Budgeting"
Mercer Doty, Budget Division
N. C. Department of Administration

10:45 a.m. Break

11:00 a.m. "The Mission Statement, Goals, and Objectives for a System of Occupational Education and for the State Staff"
Joseph A. (Pete) Perkins, Principal
Peat, Marwick, Mitchell & Company

12:30 p.m. Lunch

2:00 p.m. Work Session 1: Drafting the Mission, Goals, and Objectives for Your State System

3:15 p.m. Break

3:30 p.m. Work Session 2: Drafting the Mission, Goals, and Objectives for Your State Staff Activities

4:45 p.m. Summary and Evaluation; Exchange of materials brought from various states

5:00 p.m. Adjourn

6:30-
8:00 p.m. Social Gathering

TUESDAY, JULY 14

8:30 a.m. "Integrating Planning, Programming, and Budgeting Concepts with Office of Education Reporting Requirements"
Cliff Belcher
Assistant Director for Program Operations
Division of Occupational Education

9:30 a.m. "Program Evaluation and Review Technique"
Steve Gyuro
Research Coordinating Unit
Lexington, Kentucky

10:30 a.m. Break

10:45 a.m. Work Session 3: Scheduling and PERTing Planning, Programming, and Budgeting Initiation in Your State

12:00 Lunch

1:15 p.m. Critique of Work Session 1
Joseph Clary, Executive Director
N. C. Advisory Council on Vocational Education

2:15 p.m. Critique of Work Session 2
Robert Mullen
Associate Director for Program Services
Division of Occupational Education

3:15 p.m. Break

3:30 p.m. Work Session 4: Continuation of Activities of Previous Work Sessions

4:45 p.m. Summary and Evaluation

5:00 p.m. Adjourn

7:30 p.m. Resource Allocation Formula Discussion (3.27), voluntary informal presentations by participants interested in this topic
Mr. Belcher, Chairman

WEDNESDAY, JULY 15

8:30 a.m. "Local-State Planning Relationships"
Sherrill Goodman
Director of Occupational Education
Harnett County Schools, Lillington, N. C.

9:30 a.m. Critique of Work Session 3
A. G. Bullard, Associate Director for Program Planning and Development
Division of Occupational Education

10:30 a.m. Break

10:45 a.m. "The Integration of Planning and Evaluation"
Robert T. Williams

12:00 Lunch

1:15 p.m. "Establishing a Planning Concept and Budgeting Cycle"
Harvey Fischer
Special Assistant to the Director
N. C. Department of Community Colleges

2:15 p.m. Summary and Evaluation

2:30 p.m. Adjourn

Actual Conference Program

SUNDAY, JULY 12

6:00 p.m. Registration and Materials Pickup

MONDAY, JULY 13

8:30 a.m. Welcome to North Carolina
Charles Law, Director
Division of Occupational Education
N. C. Department of Public Instruction

Welcome to the Center for Occupational Education
John Coster, Director
Center for Occupational Education

9:00 a.m. "The Center's Planning, Programming, and Budgeting Project"
Robert Williams, Project Director

9:30 a.m. "Laying the Groundwork for Planning, Programming, and Budgeting"
Mercer Doty, Budget Division
N. C. Department of Administration

10:45 a.m. Break

11:00 a.m. "The Mission Statement, Goals, and Objectives for a System of Occupational Education and for the State Staff"
Joseph A. (Pete) Perkins, Principal
Peat, Marwick, Mitchell & Company

12:30 Lunch

2:00 p.m. Continuation of Dr. Perkins

3:15 p.m. Break

3:30 p.m. Exchange of materials brought from various states

5:00 p.m. Adjourn

6:30-
8:00 p.m. Social Gathering

TUESDAY, JULY 14

9:00 a.m. "Integrating Planning, Programming, and Budgeting Concepts with Office of Education Reporting Requirements"
Cliff Belcher
Assistant Director for Program Operations
Division of Occupational Education

10:15 a.m. Break

10:30 a.m. "Program Evaluation and Review Technique"
Steve Gyuro
Research Coordinating Unit
Lexington, Kentucky

12:00 Lunch

1:15 p.m. Continuation of Dr. Gyuro

3:15 p.m. Break

3:30 p.m. Discussion Groups:

Resource Allocation Formula Discussion (3.27); voluntary informal presentations by participants interested in this topic
Mr. Belcher, Chairman

or

Management Information Systems
Dr. Legg, Chairman

5:00 p.m. Adjourn

WEDNESDAY, JULY 15

8:30 a.m. "Local-State Planning Relationships"
Sherill Goodman
Director of Occupational Education
Harnett County Schools, Lillington, N. C.

9:30 a.m. Exchange of materials brought from various states

10:30 a.m. Break

10:45 a.m. "The Integration of Planning and Evaluation"
Robert T. Williams

12:00 "Establishing a Planning Concept and Budgeting Cycle:
Harvey Fischer
Special Assistant to the Director
N. C. Department of Community Colleges

1:00 p.m. Summary and Evaluation

1:15 p.m. Adjourn

Conference Planning Committee

Robert T. Williams, Chairman
Research Associate
Center for Occupational Education
North Carolina State University

Clifton Belcher
Assistant Director for Program Operations
Division of Occupational Education
North Carolina Department of Public Instruction

Harvey Fischer
Special Assistant to the Director
North Carolina Department of Community Colleges

Mercer Doty
Budget Division
North Carolina Department of Administration

Charles H. Rogers
Coordinator of Services and Conferences
Center for Occupational Education
North Carolina State University

Consultants

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Steven J. Gyuro
Assistant Professor of Education
Research Coordinating Unit for Vocational Education
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Spartanburg, South Carolina 29301
(7/15/70 moved to State office)

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Salt Lake City, Utah 84107

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Board of Vocational, Technical and Adult Education
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Madison, Wisconsin 53703

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Raleigh, North Carolina 27602

Miss Sybile Wilson, Consultant in Distributive Education
Room 460, Education Building
Raleigh, North Carolina 27602

APPENDIX B

EXHIBITS REFERRED TO IN PRESENTATION BY

SHERRILL GOODMAN

Exhibit #1

October 27, 1969
Lillington, N. C.

TO: High School Principals and Other Interested and Involved Persons

FROM: Sherrill T. Goodman, Director, Occupational Education

SUBJECT: Planning Local Occupational Education Programs

MATERIALS

Procedure:

Please find enclosed several packets of information that should help you with planning and implementing comprehensive occupational education programs. I suggest that you peruse this information, and make it available to your personnel and others who are involved with this process, in an effort to become thoroughly familiar with the "broad scope" of occupational education.

The publication "Planning Local Programs of Vocational Education - Some Steps" can serve as a guide to the process which we recently discussed. It contains the same process that I suggested to you and your planning committee.

Step One

Hopefully, you have begun your planning process and have covered step one in determining goals and purposes.

Step Two

This is the organization of your "Occupational Education Curriculum Planning Committee," and certain advisory committees.

Steps Three and Four

Steps three and four will probably be performed concurrently. Step three relates to considerations for the committee to determine while the students are engaged in step four, the guidance and orientation phase, which we discussed. Step four should culminate in your "Initial Survey of Student Needs and Desires."

Step Five

Step five will involve projecting priorities against the "Initial Survey of Student Needs and Desires" to determine a reasonable program to be requested for offering. (Priorities include labor market demand, space, potential availability of instructor, equipment, and so on.)

Step Six

Step six involves the preparation of courses of study, course outlines, specific equipment lists, plant facilities, time tables, and evaluation procedures for those courses that we are reasonably sure will be offered for fiscal year 1971 (beginning July 1, 1970).

Certain information will be requested by the county office as follows:

January 10, 1970 - A "Report of Courses Requested by Students on Initial Survey"

March 1, 1970 - A "Request for Instructional Programs Planned Which Are Continuing, Expanding, or New in Fiscal Year 1971."

An "Equipment List - Instructional Programs Planned Which Are Continuing, Expanding or New in Fiscal Year 1971." (This is your request for new and/or additional equipment.)

Five-year plan - FY 1972, 1973, 1974, 1975. Projected Instructional Programs Planned Which Are Continuing, Expanding or New in Fiscal Year 1972, 1973, 1974, 1975.

Copies of forms to be used for obtaining the above information are attached. The attached forms are for your information and planning. The final copies may be altered slightly.

I suggest that you implement the organizational and guidance functions inherent in this procedure immediately. Otherwise, you will be pushed to complete the process.

Please feel free to call on me if I can be of further assistance.

Exhibit #2

PLANNING LOCAL PROGRAMS

OF

VOCATIONAL EDUCATION

SOME STEPS

STEP ONE

DETERMINE PROGRAM MISSION GOALS AND PURPOSES

... To enable enrollees to enter and maintain themselves in useful, gainful employment

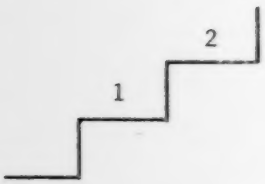
... To enable enrollees to acquire technical competence for the first job

... To enable enrollees to master those skills (technical, social, adaptive and conceptual) which will enable them to profit from on-the-job learning and to grow and mature as a worker

... To prepare the enrollees to meet successfully the demands for change and renewal which future occupational developments will require

.....

STEP TWO



INVOLVE OTHERS

... Vocational Educators in the School System

... Other Educators and the Professional Staff in the School System

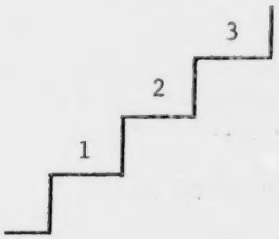
... Community Groups
- .. Business Groups
- .. Industry Groups
- .. Labor Groups
- .. Social Agencies
- .. Governmental Agencies

STEP TWO (continued)

... State Division of Vocational Education Help
.. Request State Consultant Help From...

Robert A. Mullen, Associate Director
Vocational Education
Department of Public Instruction
Raleigh, North Carolina 27602

Sherrill T. Goodman, Local Director
Harnett County Schools



STEP THREE

DETERMINE THE NEED(S)

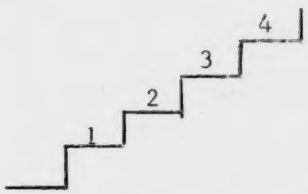
... Base Planning on Reliable FACTS

... Do the FACTS Show a Need for the Program?

... Determine Facts For...
.. What Groups to be served?
.. For What Occupations?
.. In What Numbers?

... Consider (Obtain Facts On)
.. Nature of the Local Economy
.. Local Job Market
.. Regional and National Job Trends
.. Local and Regional Educational Trends
.. Local and Regional Economic Trends

.....



STEP FOUR

DETERMINE GROUPS TO BE SERVED

... The Job-Interested High School Student

... The Disadvantaged

... Students with Special Needs

.. The Handicapped

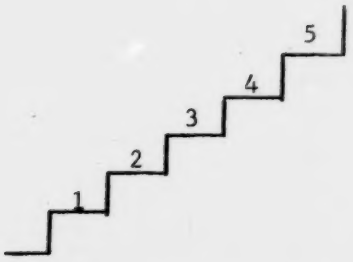
... The High School Graduate

... The School Dropout

... Employed Workers

... Displaced Workers

STEP FIVE



DETERMINE THE PROGRAM(S) TO BE OFFERED

... A comprehensive Program

.. In Terms of People Reached
.. In Terms of Occupations
.. In Types of Service

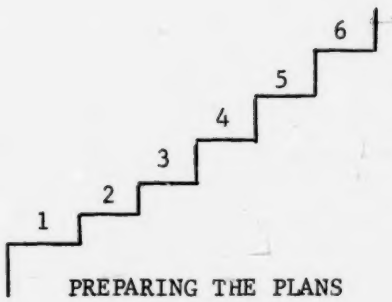
... Occupational Orientation

... Vocational Guidance and Counseling

... Instructional Programs
.. Practical Arts
.. Industrial Arts
.. Introduction to Vocations
.. Home Economics
.. Agriculture
.. Trade, Technical and Health-Related Occupations Education
.. Distributive Education
.. Office Education
.. Interrelated Occupations Education

... Job Placement

... Follow-Up



STEP SIX

PREPARING THE PLANS

... Rationale

... Details of Program Structure

... Phases of Development

... Time Tables

... Costs

... Anticipated Benefits

... Plans for Evaluation

... Plans for Periodic Adjustment

.....

PLANNING RESOURCES

... Public School Data

... Census Data

... State and Federal Division of Labor Statistics Data

... Professional Consultant Services...

Robert A. Mullen, Associate Director
Vocational Education
Department of Public Instruction
Raleigh, North Carolina 27602

Sherrill T. Goodman, Local Director
Harnett County Schools

Exhibit #3

OCCUPATIONAL EDUCATION

School_____ Courses Requested by Students on Initial Survey Date_____

Occupational Field	Number of Requests			Students Grade Level - 1970-71				
	Female	Male	Total	9	10	11	12	Total

NOTE:
This form was made available for each of five years

Exhibit #4

OCCUPATIONAL EDUCATION

School_____ Instructional Programs Planned Which Are Continuing, Expanding, or New in School Year 1970-71 Date_____

Occupational Field	Purpose	Number of Programs			Number of Man Months	Estimated Enrollment	Estimated No. to complete SY 1970-71	Labor Demand		Estimated Cost-Equip. Attach-List	Estimated Cost-Instr. Materials	Estimated Cost-Instr.	Construction or Renovation Costs	Total Funds Requested
		Continuing	Expanding	New				Area	Extent					
TOTAL								NA	NA					

NOTE:
This form was made available for each of five years

CODE: Purpose
C - Cooperative
D - Disadvantaged
E - Exploratory
G - Guidance
H - Handicapped
P - Preparatory
R - Related

Labor Demand
Area:
L - Local
R - Regional
S - State

Extent
1 - Great Demand
2 - Moderate Demand
3 - Low Demand
4 - No Demand

Exhibit #5

OCCUPATIONAL EDUCATION

EQUIPMENT LIST

School_____ INSTRUCATIONAL PROGRAMS PLANNED WHICH ARE CONTINUING, Date_____
EXPANDING OR NEW IN SCHOOL YEAR 1970-71

Course_____

Description	Cost

NOTE:
This form was made available for each of five years

Exhibit #6

November 17, 1969
Lillington, N. C.

TO: Principals, Guidance Counselors, Occupational Education and General Education Teachers

FROM: Sherrill T. Goodman, Director of Occupational Education

SUBJECT: In-Service Education - Two hours certificate renewal credit

33-Hour Workshop: Planning Local Occupational Education Programs
Thursday Evenings--4:00 - 7:00
Board of Education Annex, Lillington, N. C.
Beginning December 4, 1969
Ending March 5, 1970 (No meetings during holiday season)
No Cost to Harnett County Personnel

This course will be offered in an effort to better orient and assist our personnel to plan and implement occupational education programs. Long needed emphasis is being placed on occupational education and its relationship to the total education program. Teachers, guidance counselors, and principals at all grade levels will be involved with comprehensive occupational education in the future, and are therefore encouraged to attend.

A copy of the program is attached for your information.

Please return the registration form to my office immediately if you plan to enroll in the course.

Thank you.

Exhibit #6
(continued)

REGISTRATION FORM

33-Hour Workshop
PLANNING LOCAL OCCUPATIONAL EDUCATION PROGRAMS

Name_____School_____

Grade Level_____Certificate Number_____

Field_____Home Telephone_____

Mailing Address_____

I wish to enroll in the 33-Hour Workshop - Planning Local Occupational Education Programs - for two hours of certificate renewal credit. I understand that my enrollment is a commitment to complete the class.

Signed_____

****

(for office use)

Date Received_____

Sequence_____

Approved_____

33-HOUR WORKSHOP. PLANNING LOCAL OCCUPATIONAL EDUCATION PROGRAMS

Date	Session	Instructor		
Dec. 4	1	Mr. Clifton Belcher Associate Director Division of Occupational Education	(1 hr.)	Implications of 1968 Amendments to the Vocational Education Act of 1963
		Dr. Charles Law, Director Division of Occupational Education	(2 hrs.)	Reorganization of the State Department and Relaships to Superintendents, Local Directors, Principals, and teachers
Dec. 11	2	Dr. Robert Williams North Carolina State University	(2 hrs.)	Manpower needs in Harnett County, the Region, and State
			(1 hr.)	Small group work on Statistical Data
Dec. 18	3	Mr. Robert Mullen Associate Director Division of Occupational Education	(3 hrs.)	Developing the local plan Who is responsible Who to involve Allocation of $$$$ Procedures Questions and answers
				Articulation of Occupational Education Programs in Secondary and Post-Secondary Institutions
		Mr. Anthony Bevacqua		State Department of Community Colleges
		Mr. Niles Compton		Fayetteville Technical Institute
		Mr. Averon Upchurch		Central Carolina Technical Institute
		Mr. Robert Brown		W. W. Holding Technical Institute
		Mr. Gilbert Fleming		Sampson Technical Institute

Date	Session	Instructor		
Jan. 8	4		(3 hrs.)	One meeting to present curriculum and workshop with each group
Jan. 15	5		(3 hrs.)	One meeting to discuss articulation
Jan. 22	6	Mr. Nurham Warwick Consultant, Division of Occupational Education	(2 hrs.)	Special Programs for People with Special Needs Identification of people with special needs Clarification of programs Handling special funds Reports needed Questions and answers
			(1 hr.)	Small group work on planning for special programs
Jan. 29	7	Mr. Carl Brown Consultant, Division of Occupational Education	(1½ hrs.)	Distribution, sales, marketing, advertising
		Mr. Charles Bates Consultant, Division of Occupational Education	(1½ hrs.)	Trade and Industrial occupations Introductory courses Preparatory Training Automotive Construction Electrical Electronics Graphics Textiles Metals Health occupations Cooperative training

Date	Session	Instructor		
Feb. 5	8	Mr. V. B. Hairr, Consultant, Division of Occupational Education	(1½ hrs.)	Agricultural occupations (partial listing) Agricultural production Agricultural machines and equipment Horticulture Landscaping Forestry Agricultural management
Feb. 12		Miss Macil Via, Consultant, Division of Occupational Education	(1½ hrs.)	Business and office occupations Cooperative occupations Preparatory occupations Data processing
Feb. 19	9	Mrs. Ernestine Frazier Consultant, Division of Occupational Education	(1½ hrs.)	Home-Arts occupational programs Health and management services Food services Child care services Home furnishing services Clothing services
		Mr. Tommy Stephens Consultant, Division of Occupational Education	(1½ hrs.)	Occupational exploration
Feb. 26	10		(2 hrs.)	Orienting Students to Occupational Programs
		Mr. Robert Whitley Guidance Director, Harnett County Schools		Guidance department's role
		Mr. I. A. Wortman, Jr. Assistant Superintendent, Harnett County Schools		Teacher's role
		Mr. R. A. Gray Superintendent, Harnett County Schools		Principal's role

Date	Session	Instructor		
			(1 hr.)	Workshop - small groups
		Mr. M. O. Phillips Consultant, Division of Occupational Education	(2 hrs.)	Curriculum Materials Development and Use
Mar. 5	11	Mr. Sherill Goodman Director, Occupational Education Harnett County Schools		Developing the Local Plan

APPENDIX C

CONFERENCE EVALUATION QUESTIONNAIRE

AND SUMMARY

Circle one response (Strongly Agree, Agree, Undecided, Disagree, or Strongly Disagree) for each item.

	SA	A	?	D	SD*
1. The objectives of this institute were clear to me.	8	15			
2. The objectives of this institute were not realistic.		4	1	11	7
3. The participants accepted the purposes of this institute.	9	14			
4. The objectives of this institute were not the same as my objectives.		3	4	10	6
5. I have not learned anything new.		2		9	12
6. The material presented seemed valuable to me.	11	11		1	
7. I could have learned as much by reading a book.			4	12	7
8. Possible solutions to my problems were not considered.		3	2	14	3
9. The information presented was too elementary.		2	1	12	8
10. The speakers really knew their subjects.	6	17			
11. I was stimulated to think about the topics presented.	8	14	1		
12. We worked together well as a group.	7	13	3		
13. The group discussions were excellent.	4	12	6		
14. There was little time for informal conversation.		1	1	16	5
15. I had no opportunity to express my ideas.		4		11	8
16. I really felt a part of this group.	6	15	1		
17. My time was well spent.	6	15	1	1	

*The original questionnaire listed all the possible responses with each question, and the respondent was asked to circle his choice. The numbers appearing in the columns instead of the possible responses represent the frequency with which each of the responses was circled.

		SA	A	?	D	SD
18.	The institute met my expectations.	5	15	1	1	1
19.	Too much time was devoted to trivial matters.			2	16	5
20.	The information presented was too advanced.				16	7
21.	The content was not readily applicable to the important problems in this area.			4	11	8
22.	Theory was not related to practice.		2	3	13	5
23.	The printed materials that were provided were very helpful.	9	11	3		
24.	The schedule should have been more flexible.		1	1	15	6

25. As a result of your participation in this institute, do you plan to modify either your present or future work? YES 17 NO 4

If YES, please describe the nature of the most important of such modifications and the activities which will be affected._____

_____

_____

26. As a result of your contacts with the participants and consultants at this institute, have you decided to seek some continuing means of exchanging information with any of them, i.e., to establish some continuing relation with participants and/or consultants for the purpose of information exchange?

YES 20 NO 2

If YES, what types of information can the consultant or participant contribute that would be helpful to your work?_____

_____

_____

27. To what extent were the objectives of this institute attained?

_____

_____

28. In your opinion, what were the major strengths of this institute?

_____

_____

29. In your opinion, what were the major weaknesses of this institute?

_____

_____

_____

30. If you were asked to conduct an institute similar to this one, what would you do differently from what was done in this institute?

_____

_____

_____

31. Additional comments about the institute.

_____

_____

_____

_____

_____

32. If you had it to do over again, would you apply for this institute which you have just completed?

YES_____ NO_____ UNCERTAIN_____

33. If an institute such as this is held again, would you recommend to others like you that they attend?

YES_____ NO_____ UNCERTAIN_____

CONFERENCE EVALUATION SUMMARY

The conference evaluation form was completed by 23 of the conference's 35 participants. The form contained 33 items, with a choice of five possible responses to each of the first 24 statements--strongly agree, agree, undecided, disagree, and strongly disagree. The last nine items on the form were not scored because they required either a yes or no answer or a written response.

Each SA, A, ?, D, and SD response was assigned a value from one to five, five denoting the most desirable response to a particular item. In 11 cases SA was the preferred response; the 13 others were worded negatively, so SD was the most favorable response.

In scoring the responses to each item, the frequency for each answer was multiplied by the value (1-5) assigned to that answer. For example, item 1, worded positively, elicited only two kinds of response. Fifteen persons agreed with the statement, and eight agreed strongly. The weighted answers (15 x 4 and 8 x 5) add up to a total score of 100. This score divided by the number of respondents (23) produces a mean value for item 1 of 4.34. This value lies between the agree value (4) and the strongly agree value (5), indicating a favorable attitude toward the objectives of the conference.

To determine the respondents' attitudes toward the conference in general, all item mean scores were added together. The total questionnaire score was 98.66. When this total score is divided by the number of questions (24), the result is a mean questionnaire score of 4.11, indicating that the objectives and procedures of the conference were viewed favorably by the participants.